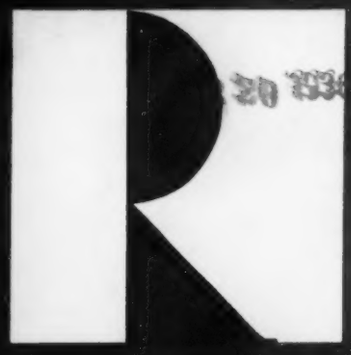
ERNEST BORN



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THE ARCHITECTURAL RECORD

1936

4

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Carey

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THE

ARCHITECTURAL RECORD

VOLUME 79 NUMBER 4 APRIL, 1936

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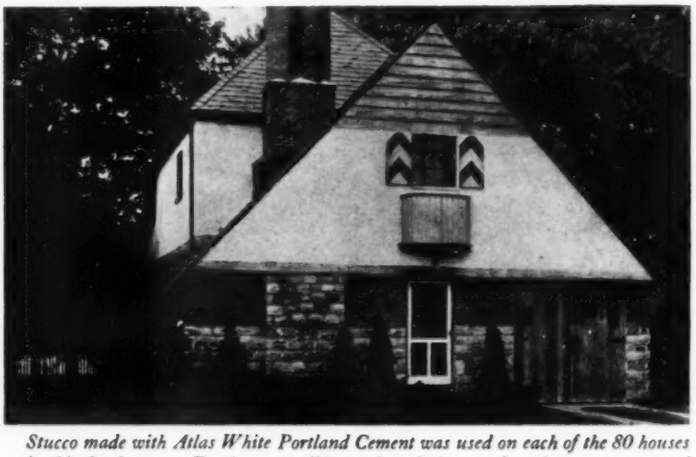
Published monthly by F. W. DODGE CORPORATION, 115-119 West 40th Street, New York. Truman S. Morgan, President; Sanford D. Stockton, Jr., Secretary; Howard J. Barringer, Treasurer. Yearly subscription: United States and Possessions and Canada, $3.00; Foreign, $5.00; Single Copy, 50c. Member Audit Bureau of Circulations and Associated Business Papers, Incorporated. Copyright, 1936, by F. W. Dodge Corporation. All rights reserved. Entered as second class matter May 22, 1902, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Printed in U. S. A.

Mott Brothers Community at Surrey Lane, Hempstead, L. I., an outstanding example of modern construction

80 HOUSES COMPLETED 800 MORE PLANNED

All beautified with STUCCO



Stucco made with Atlas White Portland Cement was used on each of the 80 houses in this development. Furthermore all house foundations and roads were constructed with Atlas Gray Cement.

THERE are eighty beautiful houses in this new community completed in February of this year by Mott Brothers, who are the architects, builders and owners. Each house is constructed of part stone or brick and part stucco. The stucco was supplied by C. A. DeLevante, Inc. of Rockville Centre, L. I., and was made with Atlas White Portland Cement.

Eight hundred more houses are planned by Mott Brothers for a development in Garden City, L. I., all of which will be of the same construction.

The beauty of using *white* portland cement in stucco is that you can get just the right color to fit the architectural design — from pure white, through pastel tints of cream, salmon, tan, pink—to rich warm yellows, browns, greens, and other shades. Stucco made with Atlas White is economical to apply on old buildings as well as new. It is permanent, firesafe, weatherproof. It requires little or no upkeep. (*A factory-prepared stucco is preferable.*)

For information about Stucco made with Atlas White Portland Cement, plain or waterproofed, write Universal Atlas Cement Co., United States Steel Corporation Subsidiary, 208 South La Salle Street, Chicago, Ill.

S-3

STUCCO MADE WITH Atlas White PORTLAND CEMENT

REVIEWS OF CURRENT BOOKS

CHURCH PROPERTY AND ITS MANAGEMENT. *By H. A. Frommelt. The Bruce Publishing Company, Milwaukee, Wisconsin.*

This volume is designed specifically for the parish priest who is charged with the responsibility of managing the church and sometimes schools, convent and rectory, which comprise a parish's physical plant.

While "the sting of the competitive lash is missing" in their management, as compared with buildings that are constructed for purely commercial purposes in a competitive renting market, nevertheless, as the author remarks, "in a highly organized material civilization such as ours, the management of ecclesiastical property is conditioned and motivated, in the main, much as in the industrial sphere."

The primary purpose of the book is to acquaint the seminarian or priest with many of the structural and mechanical parts of the physical plant of the ordinary parish, and to point the way in solving problems which arise in connection with the management of the property. In this respect, the book covers a common ground for all persons interested in real estate administration and building management. Aside from the chapter devoted to canon regulations, the book contains material of specific interest to the average maintenance executive.

The volume covers a wide area quite thoroughly, beginning with a statement of the principles of management, and proceeding to the personnel, financial, legal, social and ethical phases of the subject. Under the technical phases of management, the author considers the physical plant: its erection, maintenance and operation, describing planning practices, construction principles, repairing methods, operating economies and the principles of property insurance.

Professor Frommelt explores, adequately and with a minimum of unnecessary detail, the subjects and recent developments in the field of sanitation, power, lighting, heating, air conditioning, refrigeration and other pertinent subjects. Accounting principles, bookkeeping, and methods of record keeping are covered in considerable detail.

One of the common observations that will strike the reader of this volume is the enormous variety of tasks calling for a specialized knowledge in connection with church property management.

That church property, like all forms of commercial property, lends itself to the adoption of new facilities, inventions and equipment is shown clearly by Professor Frommelt. For example, he observes: "Significant for our purposes is the rather well-authenticated claim that the first complete air conditioning installation was made in 1912 in the Luther Memorial Church, Orange, Texas."

Further proof of the experimental or progressive trend in church architecture may be found in Barry Byrne's contribution, "The Basic Church," printed in Vol. 2, No. 1 of *Architectural Concrete*, published by the Portland Cement Association.

Reviewed by Norbert Brown.

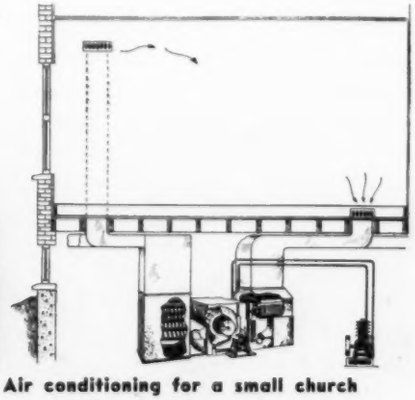
•

THE RADIANT CITY: *(La Ville Radieuse) by Le Corbusier. Boulogne (Seine), Editions de l'architecture d'aujourd'hui,* 1933. $7.50

As a layman the writer of these lines shall not attempt to give an analysis—critical or appreciative—of Le Corbusier's new book, "La Ville Radieuse." His reactions to anything coming from Le Corbusier are of too personal a nature to permit of any really sound criticism. But he should like to tell of an experience for which he feels he owes Le Corbusier the deepest gratitude; he had the good fortune to live in one of Le Corbusier's glass apartment houses—to try the whole thing out for a long period of time. Windows were sliding glass partitions, the window sashes steel frames. The portion below the windows was translucent glass with wire netting, the part of the outer wall facing the courtyard was mostly glass brick or translucent glass, the interior was flooded with an even light; it did not enter violently through a hole pierced through a dark outer wall as is usually the case in our houses of today. The building was situated to look out into a vast open green square in Paris.

In the interior the rooms were so disposed that the feeling of open air surroundings was not lost through cutting up the apartment into small cubicles. Rooms were kept as large and as open as possible without the loss of the possibility of privacy. Thus you live in constant contact with the world

An early Mission church



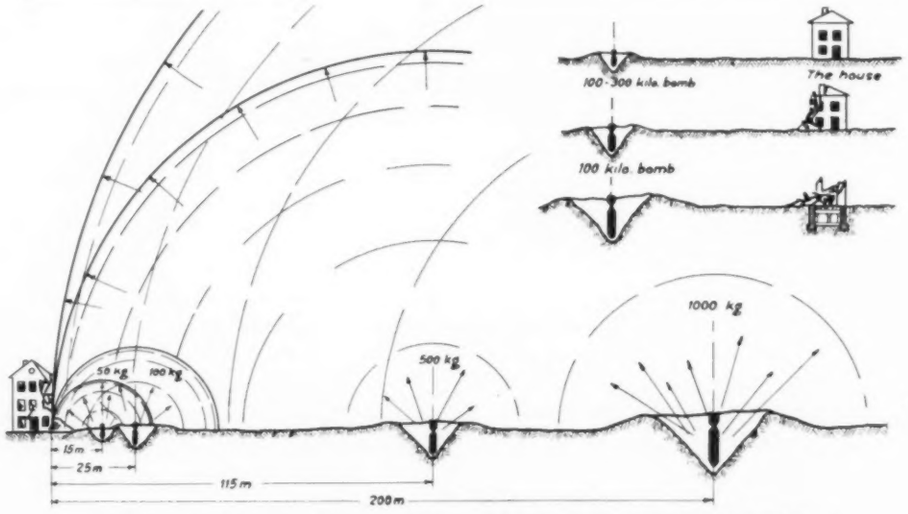
Air conditioning for a small church

THE CHURCH BUILDS WELL AND WITH AN EYE TO COMFORT
From "Church Property and Its Management" by H. A. Frommelt

surrounding you, you do not shut yourself up into the unnatural darkness of a stuffy, badly ventilated room. All this has the greatest influence on the mental condition of the inhabitant. His attitude to his fellow men becomes freer, gayer and more sociable. He lives in a state of mental relaxation and not in one of nervous tenseness caused by being crowded with others into a small space. The cleanliness and sense of inner and outer coordination in Le Corbusier's glass houses brings about something else of the utmost importance; the inhabitant of such a glass house has a natural desire to maintain his regained freedom by not cluttering up his dwelling with superfluous objects. His wants become less, his satisfaction greater, his state of mind balanced. If I were a psychiatrist I would first inquire into the surroundings of my patients and then recommend to them a one year's stay in a glass house by Le Corbusier (well knowing that they would renew their lease).

Thus, the house which here was summarily described was in a condition similar to those of Le Corbusier's Ville Radieuse—the radiant city—the book on which the writer set out to speak about. To those who have studied his previous writings this book will be a welcome summary of Le Corbusier's analyses and criticisms of the deficiencies of present-day architecture and city planning; it gives the quintessence of Le Corbusier's works and teachings of the past and a view into the future. To those who have not studied his work heretofore this book —if studied earnestly and with a mind open to the new and unconventional— will prove a revelation such as will come but once or twice in a lifetime. It is a book capable of completely changing the life of the reader if he proves willing to let himself be led away from that which he has been forced to accept and become accustomed to, due to the productions of architects whose mental parents were thoughtlessness and stupidity. For Le Corbusier's analysis of the conditions of human living are clean and simple, relentlessly logical. His plans for the construction of a new city are built up on this thorough analysis. He clearly shows the way toward the city of the future in which the constant blunders of the past and present shall be eliminated. We hold today *every* element in our hands to build cities which are worthy to house human beings (whose existence, after all, is subjected to the intricate laws of nature). Whether or not these elements should be put together in just the way in which Le Corbusier suggests, it would be foolish to quibble about—the essential part is that realizing what mistakes we have made and how they can be remedied, cities must be planned in the directions outlined for us by Le Corbusier—cities in which we will have again found "les joies essentielles"—the essential joys of life.

Reviewed by Carl O. Schniewind.



CONSTRUCTION MEN MUST MASTER THE SCIENCE OF DESTRUCTION: A STUDY SHOWING EFFECT OF VARIOUS BOMBS AT VARIOUS DISTANCES
From "Der Mensch und die Luftgefahr" by Erich Hampe

MAN AND THE DANGER FROM THE AIR: (Der Mensch und die Luftgefahr) by Erich Hampe; 117 *pages;* 12 *illustrations. Published by Rader-Verlag, Berlin-Steglitz.* 1.35 *M.*

"All building technicians must sooner or later be concerned with the question of air protection. This new field has been of increasing importance during the last three years. Technical publications and lectures are today dealing with the technological details such as fire protection, protective rooms (shelters), etc. But in order to handle these details it is necessary that the technician have a concept of air protection in its totality. He will profit from a study dealing with all the most important phases of air protection and its connection with building construction.

"A recent book by Erich Hampe, leader of the Air Protection Service, fills the need for such a survey. One of the pioneers of air protection in Germany, Mr. Hampe is already well known through his publications in this field and his lectures to the public. His new book is an excellent summary which every building technician needs.

"Especially competent is his discussion of the technique of attack; the relation of building technique, such as protective rooms and fire protection, to the whole field of air protection; his discussions of related industries. The last chapter is a description of a city experiencing an air attack. Here he shows how the many phases of the attack may be split up by the planned integration of protective measures. This thrilling description shows very clearly how the details of the air protection service work together like clockwork during an attack. Quite aside from specific questions with which technicians have to deal, it will be to their advantage to see air protection in its totality. Among the recently published books on this subject, this book serves its purpose very well."

Reviewed by Dr.—Ing. Schlossberger, in *"Bauwelt, Heft No. 7,* 1936.

MODINE BRINGS NEW *Beauty* TO CONVECTOR DESIGN

• Bringing an entirely new conception of beauty to convector design and application, Modine again makes convector history! Four types of enclosures . . . Concealed, Recessed, Floor and Wall Cabinets . . . the creation of a well-known furniture stylist — embody truly distinctive beauty of line and proportion formerly unknown to convector enclosures.

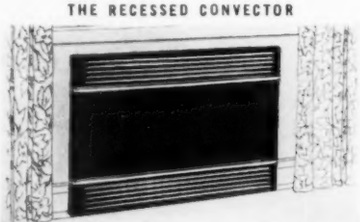
Symmetrical beauty and flexibility of design now make it possible for the discriminating architect to harmonize the convectors with the decorations and appointments of any room, in even the finest home.

From a wide selection of new interchangeable grille styles . . . ranging from the traditional to the modern — the architect can now make up his own design and more closely identify the enclosures with the style and period of his interiors.

The lines and position of the enclosure rails and stiles lend themselves especially well to attractive color treatment — either in harmonizing tones and shades or in colors directly contrasting with the finish of the enclosures.

New catalog gives complete details and specifications. *Write* Modine Manufacturing Company, 1230 17th Street, Racine, Wisconsin.

THE RECESSED CONVECTOR



MODINE

HEATING, COOLING AND AIR CONDITIONING EQUIPMENT FOR DOMESTIC, COMMERCIAL AND INDUSTRIAL APPLICATION

CALENDAR OF EXHIBITIONS AND EVENTS

April 11	Closing date, preliminary drawings in Eighth Annual Bridge Design Competition, American Institute of Steel Construction, 200 Madison Avenue, New York City.
April 16, 17	Low Cost Housing Conference, sponsored by Department of Architecture, Pennsylvania State College, State College, Pa.
April 17-19	Annual Convention, Federation of Architects, Engineers, Chemists and Technicians, Hotel Seneca, Rochester, N. Y.
April 20	Midwest Power Conference in Chicago, Ill.
May 1	Closing date, Twelfth Annual Competition for Soap Sculpture, National Soap Sculptors Committee, 80 East 11 Street, New York City.
May 5-8	Annual Convention, American Institute of Architects, Williamsburg, Va.
June 6	Opening, Texas Centennial Central Exposition in Dallas, Texas.
June 27	Opening, Great Lakes Exposition, Cleveland, Ohio.

NEWS OF THE FIELD

The Partnership of Van Ryn and De Gelleke, formed in 1897, has been dissolved. Both architects will continue their practice in Milwaukee, Wisconsin.

Walter S. Roberts, architect, announces the opening of an office at 418 Masonic Building, Owensboro, Ky.

M. J. Mendelssohn, B. Arch., has opened an office for the practice of architecture at 1434 St. Catherine Street, Montreal, Canada.

Edward Tough, architect, announces his partnership with Karl H. Sheldon. The firm will be known as Tough and Sheldon; the address remains 119 East Washington Avenue, Madison, Wisconsin.

The new firm of Harold Van Doren and Associates, industrial designers, has been formed to supersede the recently dissolved partnership of Van Doren and Rideout, Toledo, Ohio.

After an extended stay abroad, Arthur Grendon, architect, has opened offices at 7372 Sutherland Avenue, Webster Groves, Mo.

MR. ROBERT E. BOURKE MR. GEORGE HAVENS

Founded in 1867, and famous for having designed the first skeleton-construction office building, the architectural firm of Mundie and Jensen has recently been expanded to Mundie, Jensen, Bourke and Havens. The firm remains in Chicago.

THE

ARCHITECTURAL RECORD

VOLUME 79 NUMBER 4 APRIL 1936

NEXT MONTH . . . FIFTH AVENUE OFFICE OF BANKERS TRUST COMPANY, NEW YORK CITY. Shreve, Lamb and Harmon, Architects. An alteration job involving four floors. Of special interest for studied integration of modern banking services, for use of wood paneling in the banking room and in the bank elevator lobby to provide an environment of informality, and for advanced design of the safe deposit vaults. . . . **RISK RATING FOR MUTUAL MORTGAGE INSURANCE.** By Frederick M. Babcock, Chief, Underwriting Section, Federal Housing Administration. Mr. Babcock points out the modifications, additions and clarifications of interest to architects designing private houses for clients financing construction with loans secured by insurable amortizing mortgages. . . . **NEW FACTORS IN THE DEMAND FOR HOUSING.** Government employees in Washington, a Chamber of Commerce in Meadville, a city government in Springfield—all found present housing inadequate and the means of creating new housing through existing channels unsatisfactory. Setting out to fill specific needs, they arrived at widely different results: but these subdivision projects are significant for the trends they disclose in housing developments. . . . **PORTFOLIO OF CURRENT ARCHITECTURE. . . . FIVE LOW-COST DWELLINGS, WITH BREAKDOWN OF QUANTITIES AND COSTS.** Skidmore and Owings, Architects. . . . **TECHNICAL NEWS AND RESEARCH.** Provides a continuous flow of information on new technical developments — new uses and new products. Trends and events showing advances in building production are reported — new research findings, new planning or design ideas, new materials, new equipment, new enterprises, new kinds of obsolescence. Each month the new information is presented topically according to use-classifications — for example, structural parts and systems, structural analysis, structural protection, electrification, water supply and plumbing, food preparation, control of atmosphere, control of light, control of sound, furnishings and decoration, storage.

NEWS OF THE MONTH

1

2

3 *Photographs by Zimmerman*

NEW GADGETS AT COLUMBIA'S SCHOOL OF ARCHITECTURE

Students at Henry Wright's new Town Planning Studio at Columbia, abandoning traditional Beaux-Arts pencil-and-paper techniques, are employing machines for problem study. (1) The Heliodon, widely used abroad to duplicate any desired condition of time or location, appears in U. S. (2) Student Henry Feigin finds his trees too small to adequately shade his model at 2:00 p.m. August 30, latitude 38. (3) Using the new Surface Gauge to check model against "topo," Student Oppenheim finds an error, corrects it with a chisel.

"It is absurd," says Town-Planner Wright, "for students to attempt three-dimensional problems with a two-dimensional medium." The course is open only to graduate students.

•

TOWARDS A NATIONALIST ARCHITECTURE

The accelerating reorientation of architectural education now going on in the United States is seen as a nationalist trend by Professor Roy Childs Jones of the School of Architecture at Minnesota University. In a report to the American Institute, Professor Jones, who is president of the Association of Collegiate Schools of Architecture, stated that architectural schools have declared their independence of foreign influences.

"The general pattern of the more than fifty schools in this country has been molded by many influences, mainly foreign." New experiments in organization and curricula are changing this, according to Professor Jones. "The general ferment of the times has permeated the schools of architecture to no small degree. The temper of students, teachers and practitioners is to revaluate. . . .

"A new and promising cooperation between the schools and the profession is a significant development in current trends. There has been too wide a gap between school and practice. In the last year or two an organized plan has been set up by the schools, the profession and the examining boards. Somewhat after the fashion of the medical interne, the architectural student will spend three years in actual and varied practical work."

Professor Jones advocates a closer relationship between the architectural departments and the rest of the university, to promote a wider appreciation of architecture. "If only for selfish reasons, this idea might be made of immense value to the profession, since there is probably no better way for the architect to 'educate' his public than to get hold of his future clients while they are young and impressionable."

•

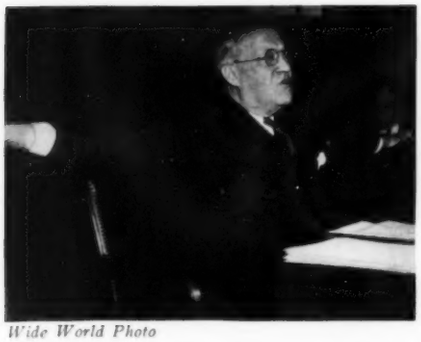
WOULD JUSTICE HOLMES HAVE LIKED IT?

Arthur A. Thomas thinks not. The aged Negro Messenger, when interviewed at his job in the Supreme Court, looked around the marble halls and shook his head: "The judge never did get to see it, but I reckon it's just as well—he wouldn't have liked it anyway."

•

R. A. SELLS PROJECT TO TENANTS

Beauxart Gardens, a 50-family Resettlement Administration Project near Beaumont, Texas, will shortly be turned over to a local corporation composed of community residents. Selling on a monthly installment basis at $23.08, each house complete with land will cost $3,058.78. Second of such transactions, it represents a new R. A. policy of turning all projects back to local management as soon as complete.



Wide World Photo

SENATE'S NO.-ONE-AND-ONLY HOUSER

Senator Robert F. Wagner, N. Y., sponsor of the mysterious "dual housing" bill which may or may not come before Congress this session.

•

A.I.A. SPONSORS COLLABORATIVE POLICY IN SMALL HOUSE DESIGN

Small House Associates, described by its founders as "a limited architectural service," has opened an office in New York City. This is the first unit of a proposed nation-wide service of small house design, made possible by a new A.I.A. policy, in which architects will collaborate on a plans-and-limited-supervision service for small home builders. This service is expected "to bring the architect more fully into the small house field" by contrasting architectural service with use of plans only.

•

GARDEN - LOVERS PILGRIMAGE TO NATCHEZ

Languishing for lack of a Rockefeller, lovely and unlucky Natchez — Mississippi's oldest town—must raise its own funds for the preservation of old buildings. To this end the Garden Club sponsors each spring a Pilgrimage, during which lovers of the antique may see many of the old plantation houses.

Once queen of the river country, Natchez lost supremacy after the Civil War. Since then a roseate mist of sentimentality (successfully exploited by novelist Stark Young) has settled over it; but Natchez remains one of America's least known and finest examples of colonial architecture and town-building.

•

A FAIR FOR THE PAST OR FUTURE?

Flushing Meadows, an area of undeveloped marshland in Queens, L. I., has become the latest battleground of classicism vs. modernism in exposition design. Site of the proposed World's Fair of 1939—for which no state or national funds have as yet been appropriated—it is already the object of heated controversy. National figures in the fields of architecture, art and the social sciences find themselves grouped in two opposing camps, with a centrist group between.

Right:

Royal Cortissoz, art critic and avowed traditionalist, thinks "the genius of beauty must preside over the Fair." The governing group of architects and artists must be "absolutely ruthless" in enforcing their plans to this end. On the other hand, Mr. Cortissoz thinks that "any one who introduces politics into the 1939 World's Fair . . . ought to be shot."

George McAneny, president of the Fair Corporation which will ultimately determine policies and select designers, is noncommittal but remembers the 1893 Chicago Fair "as an expression of our art and architecture that I presume has not been surpassed since."

Center:

Olin Downes, music critic of the New York Times, is "absolutely dazzled" by the possibilities of music at the Fair.

Electus D. Litchfield, architect, hopes the Fair will "be a monumental composition of great beauty." But he warns that "none but the brave deserves the Fair."

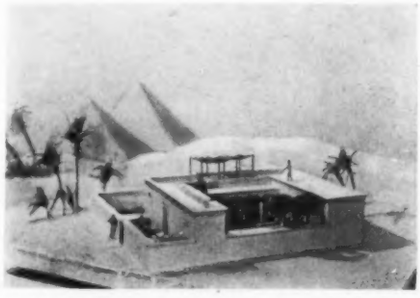
Left:

Michael Hare, architect and secretary of a strong left Committee, opposes spending $45,000,000 (estimated cost of Fair) in an effort "to dodge life." The only justification of such a Fair would lie, he thinks, in showing the American people "the way to a fuller life."

Henry Wright, town planner and member of the Committee, thinks that "the Fair should be built around an idea and not a Court of Honor."

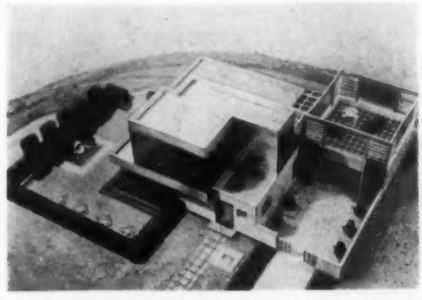
Photographs by R. E. Pope

1. Neoliths fished through holes in the floor.



2. A $50,000 model for Egyptian suburbs.

3. Caesar found this type easy to sack.

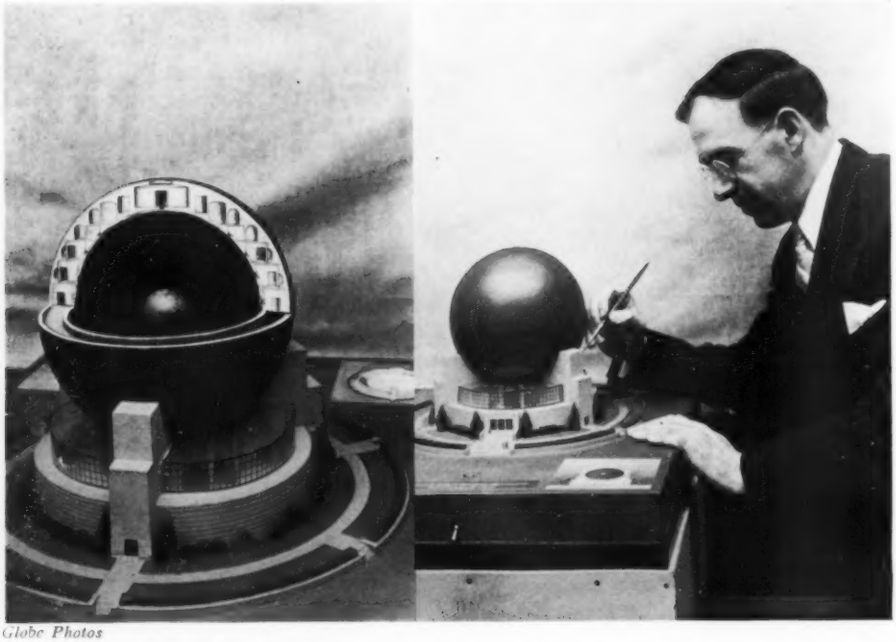


4. With big windows to let in light.

IN DEFENSE OF THE "DETACHED" HOUSE

Appearing in New York's Museum of Science and Industry are 11 dioramas showing the development of the housing idea from Neolithic to present times. Popularizing the contemporary American idea that all houses must be detached, this exhibit significantly minimizes history's numerous ventures in communal housing. Executed by Hugh and Helen Perrin, under supervision of Bemis, Burchard and Gunther, Associates.

NEWS OF THE MONTH



Globe Photos

THE COSMOSARIUM: A PLANETARIUM IN REVERSE

In a planetarium man studies an ideal heaven, free of cloud and rain: in Mr. Peter Bittermann's cosmosarium, man can study an ideal earth, free of strikes and war. Both will be money-makers in the average city, according to Mr. Bittermann, architect, whose cosmosarium has the distinction of being the first definite proposal for the proposed 1939 World's Fair.

The cosmosarium consists of a circular masonry base, three buttresses and a hollow concrete sphere 128 feet in diameter. The base will be given over to entrance hall, cloak rooms and small exhibition rooms, with larger glass-walled galleries on the second floor. The three buttresses will contain elevators for access to the spiraling ramps between the inner and outer spheres. The interior of the sphere is 100 feet in diameter, in the center of which hangs a 20-foot model of the earth, exact to the last detail and executed at a scale of 32 miles to the inch. From the ramps between the inner and outer spheres, the spectator will be able to view the world from all angles at a relative distance of 20,000 miles. (Manhattan Island, visible only through binoculars, will be ½" long by 1/16" wide.) A model sun will shine with proper brightness, planets and stars will move in their respective orbits. Escalators will make inspection easy and lounging spaces will be provided at regular intervals along the ramps.

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NAMED FOR AMERICA'S MOST DANGEROUS WOMAN

Superstructure bids are being taken on the Jane Addams Houses, 1,000-room PWA low-rent housing development in Chicago. First of 48 PWA projects to reach this stage, it is named for the famous founder of Hull House, whom an ROTC bulletin listed as "America's most dangerous woman" because of her constant efforts for peace.

GOLDFISH ON THE SKYLINE

Using more of everything than any other sign in existence — 1,084 feet of Neon tubing, 29,508 lamp receptacles, 110 tons of structural steel—the new Wrigley spectacular now flashes across Times Square. Abandoning the frenetic, eye-jerking technique of the past, the new sign paints a picture of lazy submarine life in the tropics. Goldfish 42 feet long glide through emerald Neon seas, electric bubbles rise slowly to the surface. This plea for slower gum-chewing tops a new taxpayer on Broadway between 44th and 45th.

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URBANISM IN NORTH AFRICA

The Exposition of the Modern City, open in Algiers until April 19, brings to the African city the work of international figures in architecture and city-planning. Sponsored by the International Congress of Modern Architecture, this exhibit is divided into four main sections—Urbanism, Architecture, Housing, Planning and Construction. These sections are further subdivided on a geographic basis—Algiers and Its Region, Algeria and North Africa, Metropolitan, Colonial and Foreign.

The Congress, composed of national "groups," was organized in 1927; its purpose is the exchange and analysis of modern problems in planning technique.

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A.I.A. CONVENES IN WILLIAMSBURG

Because of inadequate hotel accommodations, delegates to the national convention (May 5-8) will commute daily from Old Point Comfort to the Rockefeller Restoration. Excepting May 5, all day sessions will be held in Williamsburg; these sessions will be open to all architects, irrespective of Institute affiliation.

GRANULATED SUGAR "BOMB" ROCKS SYRACUSE UNIVERSITY

Police and Secret Service agents "questioned and released" the twenty-five architectural students at Syracuse who decided, after a night charrette on a church problem in architecture, to mail Chancellor Charles W. Flint a bomb. Batteries, cotton soaked in melted sugar, cardboard tubes filled with granulated sugar—"to represent some imaginary explosive"—and an old clock "wound up so it would tick," constituted the infernal machine. It was opened, after having been dipped in water, at the post office. The ensuing furore was so great that the students "voluntarily reported to Police Headquarters to explain it was all a joke." Glenn M. Beach, spokesman for the group protested earnestly: "I swear this was done in the spirit of fun and none of us realized the seriousness of the prank. . . ."

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CINCINNATI A.I.A. DINES, OMITS COMMITTEE REPORTS

Meeting on March 17 for the 519th time, the Cincinnati Chapter had as its guests the Architects' Water Color Club, a group which has no officers, no dues and no minutes of the last meeting. "Amid the peaceful din of ale mugs" the members drove the sinful serpents from Old Erin, adjourned to the next room to hear Frederick Garber criticize the 180 sketches and lithographs which composed the Club's annual exhibition.

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BUFFALO SETS A PRECEDENT

The year-old Small House Bureau of the Buffalo A.I.A. sets a precedent which the Institute itself has followed—the use of "stock" plans and specifications for use in the small house field, with optional supervision at a uniform fee.

F.A.E.C.T. CONVENES IN ROCHESTER

The Second National Convention of the Federation of Architects, Engineers, Chemists and Technicians will be held in Rochester, N. Y., April 17, 18 and 19. The main problems before the Convention will be: affiliation with the American Federation of Labor; continuance of existing WPA projects at prevailing wage rates; legislation for protection of Civil Service standards; unemployment and old age insurance; housing; professional licensing; improvement of technicians' status in private concerns. Each Federation Chapter is entitled to three delegates for the first three hundred members and one for each additional five hundred. All technical organizations are urged to send two fraternal delegates.

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VERSAILLES A LA PETER HENDERSON

Brought to the New York Flower Show as a background for a formal garden by Peter Henderson Company was the garden façade of Marie Antoinette's play castle, Le Petit Trianon. The façade, scaled down to create the illusion of distance, overlooked a garden of forced hybrids such as Antoinette never dreamed of.

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KATE NEAL KINLEY MEMORIAL FELLOWSHIP

A $1,000 award for a 10-month program of study here or abroad. Requirements: Applicants must be graduates of College of Fine and Applied Arts of University of Illinois or equivalent institutions. Applications must be filed before June 1, 1936. Inquiries to Dean Rexford Newcomb, College of Fine and Applied Arts, University of Illinois, Urbana.

LEON V. SOLON

Under contract to color all Rockefeller City statuary is polychromist Solon, who last year tinted the Laurie sculptures over the main entrance of the RCA Building. Mr. Solon, many times a medalist, was polychromist of Philadelphia's Museum of Art. He was recently awarded the Binns Gold Medal of the American Ceramic Society.

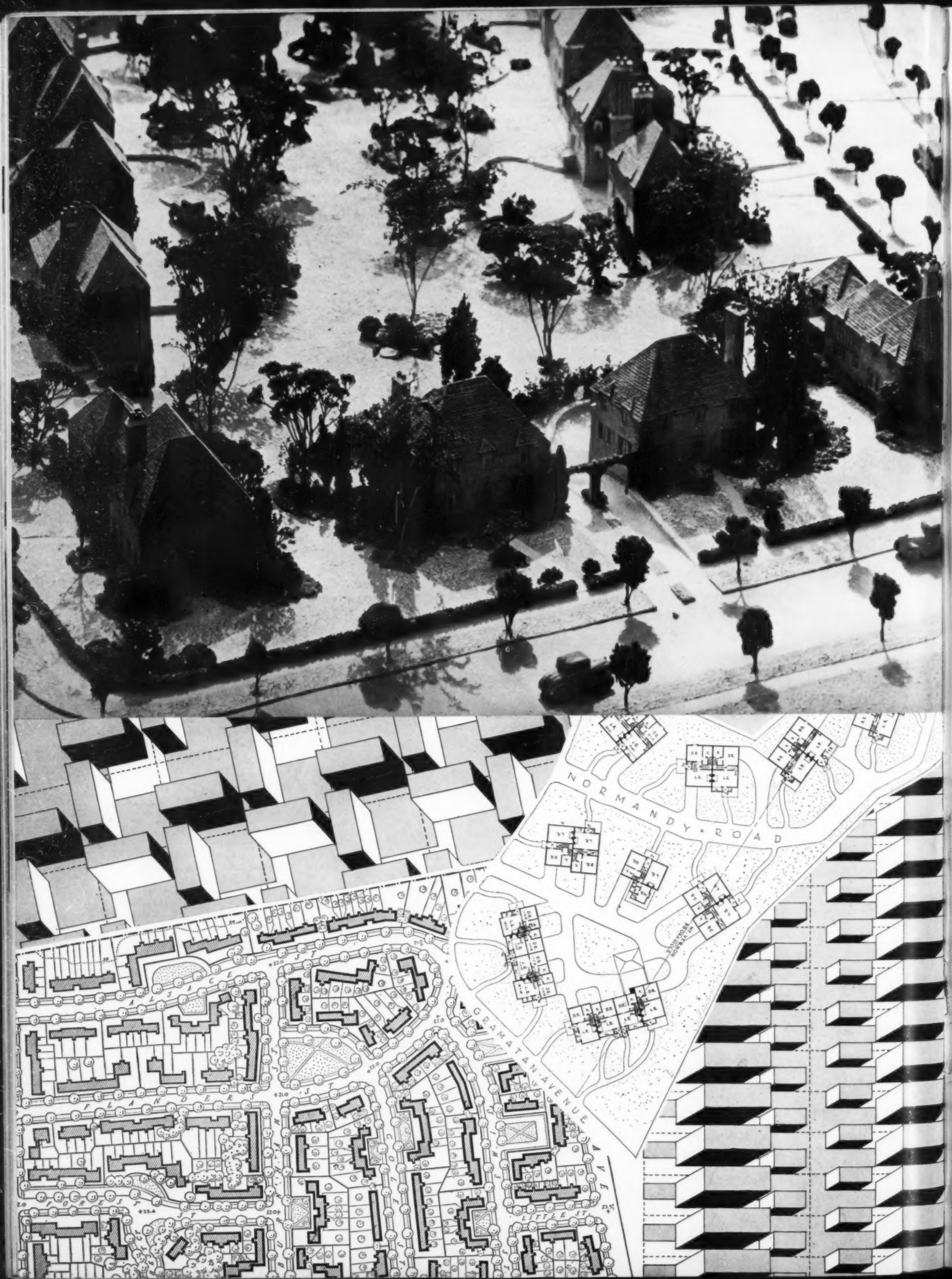
LEGALIZED BY A RECENT SUPREME COURT

decision, construction proceeds ahead of schedule on TVA's Joe Wheeler Dam. Located 12 miles upstream from Wilson Dam, this project is part of a vast program to rehabilitate the Tennessee Valley.

Wide World Photo

FHA HELPS LIQUIDATE BOULDER CITY

A group of Salt Lake City (Utah) business men has purchased the model city built by Uncle Sam to house workers on the now-finished Boulder Dam. More than 600 houses and many of the larger service buildings, containing over 3,000,000 feet of lumber, will be razed; rebuilt in six western states as two-, three- and four-room modern houses; sold under the FHA Single Mortgage System. Only a remnant of the planned city in the desert will remain.


NORMANDY ROAD
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THE ARCHITECT AND THE SMALL HOUSE

By William Stanley Parker, F.A.I.A.

In starting to focus my thoughts on the subject of this article I wrote down the above title and then found it was the precise title given to an article I wrote for The Architectural Record of September 1931. That article aimed at an indication of the opportunity for the use of an architect's service in the small house field as well as methods of economy he must develop in his practice if he is to make himself useful in the low-cost portion of this field.

A good deal of water has gone over the dam since then. This metaphor suggests a further illustration of the changing situation in this phase of construction. So far as architectural service has been concerned there has been an actual damming up of its potentialities by the heretofore current practices and standards of the loaning agencies and the speculative builders.

Money was freely available to any speculative or operative builder with no requirements that the work should be competently supervised and with only such approval of design as the membership of the security or appraisal committee could and did exercise. An architect on a security committee was a rare exception that merely proved the rule. Whatever judgment was applied to the quality of the design and its fitness for its site, such judgment was inevitably inexpert and casual. The physical evidence offered by the houses actually built is sufficient support for this statement.

If the bank were not concerned to demand technical judgment in regard to design and construction, it was clearly not to be expected that the speculative builder would worry. The bank's interest would continue for twelve years. The builder expected to, and generally did, get rid of his responsibility a relatively few weeks after the house was built. And the freer hand he had to cut corners, the larger his margin of profit. The buyer must beware. He is the one to hold the bag until the bank takes it over.

Thus had been erected the dam that held back the big pool of architectural service and prevented it flowing in desirable manner with the current of small house construction activity. But times have changed in certain important respects. The underlying real estate mortgage structure became jeopardized and the HOLC was set up to save the patient. In the process various symptoms clearly demonstrated that the sickness had been greatly aggravated by careless exposure of the patient to uneconomic practices, developing a good deal of water on the lungs.

It became apparent that much money had been loaned on material and labor not actually put into the property and on community values related to architectural fitness that had been falsely appraised or neglected. The HOLC operating on a national basis naturally developed certain standards for appraisal, and the dam that had been shutting off the flow of architectural service into this field was immediately lowered an appreciable amount.

The point particularly to be emphasized in this instance is that the lowering of the dam was due to the act of a nationally organized loaning agency. For the first time standards of design and construction were set up and arrangements made for their appraisal by technically trained persons. While a smaller amount of service by fee-architects resulted than had been hoped and expected, the various state offices included architects in important supervising capacities and much experience was gained that is bearing fruit.

The small house patient having been eased over the crisis, aids to as rapid a convalescence as possible were seen to be greatly needed and the Federal Housing Administration was established for the purpose. While the HOLC ministered to the errors of the past, the FHA was to aid the patient in its future steps, freeing its muscles from cramp, and developing exercises so it could walk alone again but with a new accident insurance policy that would protect it against serious falls.

This naturally involved the prescription of certain normal methods of procedure that would protect the patient, such as an adequate appraisal of neighborhood conditions, a design fitted to its site and of itself good, adequate specifications and plans, and competent supervision to assure con-

formity thereto. Again the dam was lowered and even more significantly than before, because while the HOLC let architectural service flow into the modernization field, the FHA now paved the way for it to enter as well the vastly more important field of new construction.

Again the point to emphasize is that the lowering of the dam was due to a national organization that had become, in a new way, a part of the loaning agency group. Just how much architectural service is going to be released will depend on two factors: first, the real depth of the pool of service architects are able and willing to provide in this field and second, the one important resisting factor that still remains the architect's most serious opponent in the loaning agency set-up. Let us then consider these two factors in the order stated.

In endeavoring to appraise the amount of service architects are ready to provide in this small house field, it may be useful to estimate how much service it could absorb. Any such estimate will be a good deal of a "shot in the dark" because it is a field heretofore almost completely ignorant of such service, and which architects themselves ignored.

As a basis for an estimate, let us assume that some form of limited service, approved by the profession, is made available for houses costing less than, say $7,500, most of which would be below $5,000. Let us also make the assumption that loaning agencies and builders want such service. Let us assume the service involves twelve conferences and inspections taking two hours each or a total of 24 hours per house, the equivalent of three 8-hour days. Let us assume two other days are used for related work, preparation of designs, specifications, and other incidental work related to such service.

On the above assumptions, an architect could personally handle about a dozen houses at a time, taking about three months to build, or say 50 houses each year. Assuming an average fee of $150, based upon repeated use of stock designs made by the architect for the service of such clients, his gross annual income would be $7,500, with a probable net profit over and above office expenses of from $4,000 to $5,000 a year.

The number of houses to be built during the next ten years has been a fertile field for estimates. They range from seven to fourteen million. Let us be conservative and assume 600,000 a year and assume further that 400,000 of these would fall in this low-cost small house field. If the potential demand for houses costing from $2,500 to $5,000 is actually met, this last assumption may well be too low. At 50 houses per architect per year, 400,000 houses would require the full services of 8,000 architects, earning from $4,000 to $5,000 a year, or total net earnings to the profession of $40,000,000 a year, gross earnings being $60,000,000 on a gross construction cost of about one and a half billions.

There are, of necessity, a number of assumptions made above, and each one is subject to criticism as being too high or too low. The reader is asked to revise these various assumptions in accord with his best judgment and to revise the totals accordingly. I believe that no matter what reasonable revisions are made, the total potential architectural service indicated will be enormous. The total number of architects in the country, as estimated by the Code Committee from figures submitted by the National Council of Architectural Registration Boards, is less than 16,000. On the above assumption half the profession would be fully occupied in supervising small houses, for which a negligible amount of service has been provided heretofore.

What must the profession do if this potential demand for its services is to be met and, what is more, actually attracted? Recent experience in several cities indicates the need of well-organized group action in order to develop a technique adapted to the economical service of this type of client and to form an organized point of contact with the loaning agencies through which the clients will probably be reached.

The Federal Housing Administration, with its Underwriting Manual, constitutes a signboard pointing to the architectural profession for the guidance of any one desiring to finance the construction of a house with an insured mortgage. Its standards of design, and for the documents illustrating the design, require competent architectural service. Architects should become wholly familiar with this manual in order to know just what will be required. Incidentally, a full knowledge of the underwriting methods involved will be desirable if the architect's plans are to fit all the requirements when first submitted. The waste involved in corrections and repeated submittals must be avoided if the architect is to be successful in serving small home owners with a limited service.

The possibility also suggests itself of attracting such clients directly to the architect by offering a broader service that shall include advice as to the different methods of financing available. This would mean that the architect must become fully familiar with the financing procedures and limitations of savings banks, cooperative banks, building and loan associations, and the newly created Federal Savings and Loan Associations. These latter, together with many cooperative banks and building and loan associations, now function as members of the Federal Home Loan Bank System.

At present the small house owner or builder tends to go first to a contractor or speculative builder and then to the loaning agency. Neither the builder nor the loaning agency, as already pointed out, has been inclined to raise the question of an architect. Policies now developing among thoughtful loaning agencies are tending towards an advertising campaign that will seek to lead the owner to go first to the bank. A program of public information by the profession may some day be developed, when the facts warrant it, that will advise the owner that the architect is more broadly equipped than either the builder or the loaning agency to advise him simultaneously on design, construction cost and methods of finance. To justify such a program architects must make full knowledge of financing procedures a normal part of their technical equipment.

The newly developing policies of loaning agencies just mentioned refer to the program for a Home Builders Service now being tested out by certain member banks in the Federal Home Loan Bank System. It constitutes the third step in the process of lowering the dam that has been holding back architects' service from this field. Again the action is taken by a national loaning agency. Being now thoroughly accustomed to alphabetical symbols, let us print the initials of these three forward steps that have a vital significance for the architects of this country—HOLC—FHA—FHLB. This third step follows naturally and logically after the second. The FHA, in its manual, enunciates the standards that are required for a mortgage that will be deemed proper for insurance. The Home Builders Service, being developed for the Federal Home Loan Bank System, provides a procedure calculated to produce houses that will meet these standards.

The service as now suggested is to be made available to owners through the member banks but not made mandatory. It involves of necessity organized cooperation by the profession, for architects must be available and ready to serve clients of the banks on some definite basis, agreed upon in each district by the architects and the banks. There is nothing violently novel in the proposal. Certain conservative savings banks have provided for years somewhat similar service on all structures they have financed. The novelty consists in the fact that a national loaning agency is suggesting to its member banks all over the country that they all set up such a service for the benefit alike of themselves and their customers.

It is, of course, the intention of the banks, in setting up this service, to feature it in their advertising as something of value to home builders, aiming to lead them first to the bank rather than to the contractor or operator. Thus a substantial amount of advertising of the profession, and the service it can render to the small home owner, will automatically result. And it will be all the more effective in that it will emanate not from the profession itself, but from another source.

The service as proposed is optional with the owner. To what extent will the loaning agencies urge the customer to use it? To what extent will they continue to give equally favorable loans on houses of doubtful design and unsupervised construction? To what extent will they give a preferential treatment to customers who use this service, perhaps a more generous appraisal, or perhaps a longer period of amortization, or perhaps even a slightly lower interest rate? On the answer to these questions rests, perhaps, the extent to which this service will result in business for the profession.

And on one other very simple human factor—the quite understandable selfish interests of the members of the various security committees and appraisal committees. They constitute that one important resisting factor that I referred to above as the architect's most serious remaining opponent in the loaning agency set-up.

Special fees are collected from borrowers to cover inspections by members of these committees. They view the site and appraise the value of the lot and the proposed house. This function they must of course continue to perform. It is their essential responsibility. Any fees pertaining to it are legitimate and should be continued.

In addition to this function, however, members of these Committees are accustomed to make an inspection prior to each payment on the loan in order to determine that the work has progressed to the required extent. These inspections, except in rare instances, give no consideration to whether the work has been properly executed but only to whether the foundations are in or to other facts of general progress that determine whether it is appropriate for a further payment to be advanced by the bank.

It is commonly admitted by representatives of these loaning agencies that these so-called inspections are very largely made from an automobile without bothering to go onto the lot or into the building. For these inspections the borrowers pay special fees. The inspections give no service to the borrower and give no protection to the bank so far as assuring proper construction processes, except in the rather rare cases where the committee member is an architect or a contractor who actually exercises his technical knowledge by careful inspection and actual enforcement of good practice and the requirements of the plans and specifications on which the loan is based. Again the physical evidence of the houses built during past years is adequate support for this statement.

If the proposed Home Builders Service is used, the technical inspections by the architect will provide not only an assurance of proper materials and workmanship but also information on progress by which to make the various payments on the loan. Visits by members of the Security Committee will be valueless and fees for such visits, therefore, improper. The architect will have a responsibility to both the owner and the bank. Where a speculative builder is the temporary owner, the architect's responsibility must be primarily to the bank as the representative of the ultimate home owner whose interests are principally involved.

Here there is the factor that will test the integrity of the loaning agencies and the members of their appraising committees. Happily there are indications that they will recognize their positions of trust and their responsibility to the investors in the shares of these loaning agencies. The past procedures have gradually developed over a long period of years. The bitter fruits of these methods have been tasted by the loaning agencies and the myriads of poor families who have sunk all their savings in a shoddy piece of real estate. The time for a change to saner procedures has come.

Will the architects of the country rise to the occasion and prepare themselves to meet the problems of this vast new field of service, the doors to which are being opened to them by FHA and FHLB?

Will the member banks of the FHLB and other similar loaning agencies recognize their responsibility and see that the doors are opened way back and a welcoming hand held out to their new architectural partners?

To revert, for a final word, to the earlier metaphor—how far has the dam been lowered? And to confuse the metaphor still more—to what extent will the profession "go over the top"?

HARBOUR GREEN — NASSAU COUNTY, LONG ISLAND

THE FEDERAL HOUSING ADMINISTRATION AND SUBDIVISION PLANNING

By SEWARD H. MOTT, Chief
Land Planning Technical Section
Federal Housing Administration

Under the Federal Housing Administration's Insured Mortgage Plan approved lending agencies are being insured against loss on residential mortgages which meet the requirements and receive the approval of the Federal Housing Administration. If the security warrants, up to eighty per cent of the appraised value of a property may be borrowed at low interest rates. The principal is paid back in monthly installments over a period which may be as long as twenty years. This plan has decreased the cost of home financing tremendously and home buyers are eager to take advantage of it. To make certain that the security behind these mortgages is a safe risk, a most interesting system of appraisal has been set up which not only rates the physical property and the borrower but carefully considers the neighborhood in which the property is located. If the neighborhood rates lower than fifty per cent the property is rejected. This definite recognition of the influence of the neighborhood on property values is of great significance. The specific phase of neighborhood rating that will be discussed in this article has to do with the review and approval of undeveloped subdivisions. Because the type of neighborhood that will be created in an undeveloped subdivision must to a considerable extent be assumed, a careful investigation of all the factors affecting its development is made before it can be approved as a desirable site for homes. The Federal Housing Administration's Circular No. 5 on Subdivision Development will be of particular interest to all architects and builders. It is a Subdivision primer and outlines briefly the salient points in subdivision development. These are grouped under the heads of ***Minimum Requirements*** and ***Desirable Standards.*** In this Circular will be found the following statement of policy. "It is only by consistently developing areas which are ripe for use, by reorganizing subdivisions which suffer from planning and financial and legal encumbrances, and by postponing or abandoning the building up of subdivisions which are premature or plainly superfluous, that a stable realty condition can be established which will justify mortage lending and the insurance of mortgages in new neighborhoods."

Minimum Requirements

Before a subdivision is approved as a desirable site it must conform to the minimum requirements. These are:

First Requirement—there must be convincing evidence of a healthy and active demand for homes of the type contemplated and at the prices asked.

This requirement can be considered the keystone of the Subdivision approval. No matter how attractive its surroundings or how well it is designed and restricted, a real need must be demonstrated before approval can be given a subdivision. When there is little or no demand, the property cannot be considered economically sound and it, therefore, is not a safe mortgage risk. The wild platting of land that in the past has resulted in losses of hundreds of millions of dollars to purchasers and investors can be influenced to a very considerable degree through insistence that a demand must be demonstrated before approval will be given.

The need of a property may be measured in a number of ways. Dependence is placed to a great extent on the judgment of experienced real estate men in the district insuring offices, who are thoroughly familiar with

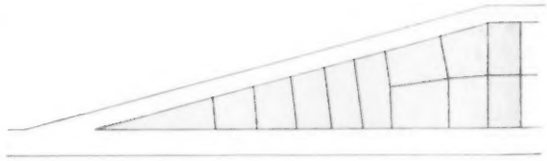
the local real estate market. Data collected by the Federal Housing Administration's Economics and Statistics Section are also relied upon. Such matters as population growth, industrial activity, number of vacant houses, trend of residential development, sales in comparable properties, real property inventories and a check on the lots that are available in competing subdivisions are considered.

Second Requirement is that the site must be suitable. It must be plainly appropriate for the type of development contemplated. The topography and the condition of the soil and tree growth are noted and possible natural or created hazards such as flood, fog, smoke, obnoxious odors and similar undesirable conditions checked.

Third Requirement is that the subdivision must be easily accessible by means of public transportation and adequate highways to schools and employment and shopping centers. The distance to be traveled and the cost of transportation must be within reasonable limits and appropriate to the type of development contemplated. The cost of transportation and access to employment centers of a workmen's development would, of course, be somewhat different from that of a development for more expensive homes.

Fourth Requirement covers the installation of appropriate utilities and street improvements. The type and cost must be carefully related to the actual needs of the development. Wherever possible we want the improvements to meet the specifications of the city or county so that they can be dedicated.

When a street is dedicated the responsibility for maintenance, of course, is transferred to the municipality and there is fair assurance that the improvements are appropriate to the climate and needs. Due to climate and local custom, road construction that is considered adequate in one section of the country is undesirable in another. A dirt road that would be perfectly satisfactory in Texas where the ground does not freeze would be most inadequate in Minnesota. This also applies to other utilities and improvements. Consequently, no hard and fast rules have been drawn covering the kind of improvements to be put in with the exception that an adequate supply of pure water is always necessary and a method of disposing of sewage is required that meets the approval of the state or local health authority. However, water supply from wells can seldom be relied upon either for purity or quantity and therefore is not encouraged. If the drainage is not excellent and the lots of fairly generous size, disposal of sewage by means of septic tanks presents serious difficulties.

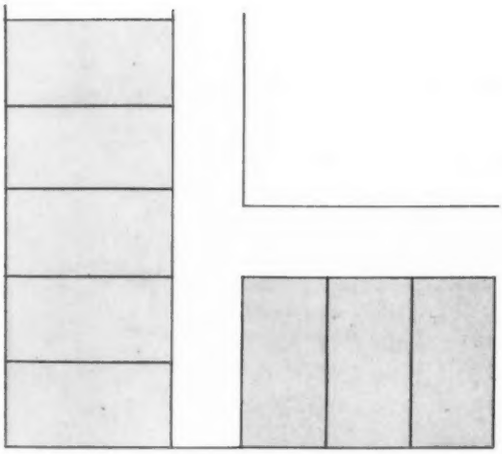


BAD

Sharp intersections making serious traffic hazard and resulting in expensive and inefficient lot subdivision.

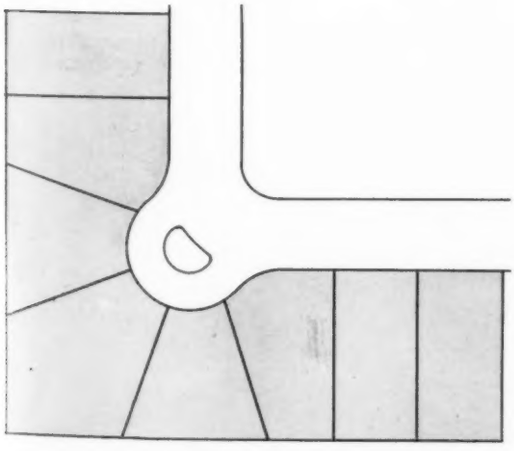
GOOD

Street interesecting highway at right angles, eliminating traffic hazard and resulting in well-shaped lots.



BAD

Treatment of a corner of a subdivision. Excessive area in streets; lots and houses grouped in poor relation to each other; dead-end street without turn-around, making difficult traffic problem.



GOOD

Treatment of a corner of a subdivision. Minimum area wasted in streets; houses attractively grouped in relation to each other; no traffic dead-end.

In practically all cases the responsibility of furnishing an adequate supply of pure water at a fair price is placed squarely on the shoulders of subdividers and where the cost of extending the city sewers is no greater per lot than the cost of a properly designed septic tank, the installation of sewer lines is required. Investigations indicate that poorly improved subdivisions seldom develop into attractive or stable neighborhoods. Such properties are usually sold on a land speculative basis with but little interest in the building up of a permanent community. The actual investment of the promoter is usually so small that he can take a quick profit in the land and get out, assuming no responsibility for its development or the enforcement of the restrictions. The result is usually an orphan subdivision and a blighted and undesirable neighborhood—an area to be avoided when investment risk is considered. This does not mean, however, that the Federal Housing Administration requirements are so severe as to prohibit the approval of low-priced properties.

Fifth Requirement is "Whenever the subdivision or any part of it falls within the jurisdiction of a city, county or regional plan or of subdivision regulations, the design and development shall comply with such plans and regulations." The surest way of stabilizing a neighborhood and consequently real estate values is through well-drawn zoning and city planning regulations. Because economically sound real estate is of paramount importance to the Federal Housing Administration, zoning, planning and subdivision regulations receive its hearty and full support. The import of this is far-reaching. As the program develops and people become more conscious of the desirability of the Federal Housing Administration's plan of financing, greater and greater pressure is placed on the subdividers to qualify their developments. Numerous letters have been received from real estate firms stating that without Federal Housing Administration approval they are meeting tremendous sales resistance and that even when other methods of financing are available the people still want to use this plan. If the subdivision is not approved they buy in an area that is. I think that at last a real lever has been found to force the unscrupulous developer to conform to local zoning and subdivision regulations.

Sixth Requirement is that additional protection be provided by means of appropriate deed restrictions. Few zoning regulations are broad enough to provide the complete protection necessary to assure the subdivision developing into a really homogeneous neighborhood. All too seldom are areas zoned for single-family use only, and only occasionally do zoning ordinances

regulate the size of the lots. Another shortcoming of most zoning regulations is the excessive areas allocated to commercial use. Many studies have been made by city planners and municipal organizations of the percentage of area that should be assigned to retail stores and similar business uses but it is seldom that a zoning map reflects their findings. In the outskirts of most of our cities and along the main arteries are miles of vacant frontage that have been zoned commercial and that will be vacant for years. This property can produce no income and is rapidly being overburdened with taxes. The result is blighted unoccupied strips along these main approaches. Unless both sides of the highway are controlled by the developer, deed restrictions can do but little good in overcoming this condition. Consequently, thousands of feet of valuable frontage have had to be excluded from the benefits of the Federal Housing Administration's financing plan. It would seem much wiser if local business and retail stores uses were limited to centers grouped on the main thoroughfares at important intersections and at convenient intervals. These centers could be planned as a unit with architectural control, adequate parking facilities and with a sufficiently large area from which to draw customers. There would be little danger of a shopping center of this kind adversely affecting residential value.

Seventh and Last Requirement is a sound financial set-up. The subdividers must be financially able to carry through their sales and development program and there must not be a disproportionate number of lots that have reverted or purchase contracts or taxes that are delinquent. The assessments and taxes to which the property is liable must be in line with the type of development contemplated.

These are the Minimum Requirements that must be conformed to. From this point on it is the endeavor to secure as many of the *Desirable Standards* as possible. These desirables are recommendations, not requirements. However, if some of them were notably lacking approval would be withheld until the condition was corrected. They include the careful adapting of the subdivision layout to the topography and to natural features; the adjustment of the street plan and street widths and grades to best meet the traffic needs; the elimination of sharp corners and dangerous intersections; long blocks with the consequent elimination of unnecessary streets; a carefully studied lot plan with generous and well-shaped house sites; parks and playgrounds; the establishment of community organizations of property owners and the incorporation of features that add to the privacy and attractiveness of the community.

These *Minimum Requirements* and *Desirable Stand-*

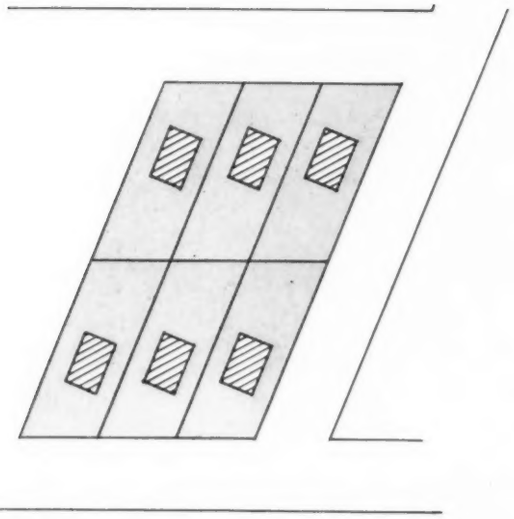
BAD

Zoning permitting excessive shoestring commercial development along entire length of street; architectural control difficult; parking problem not considered; sites for more stores than community can support.

GOOD

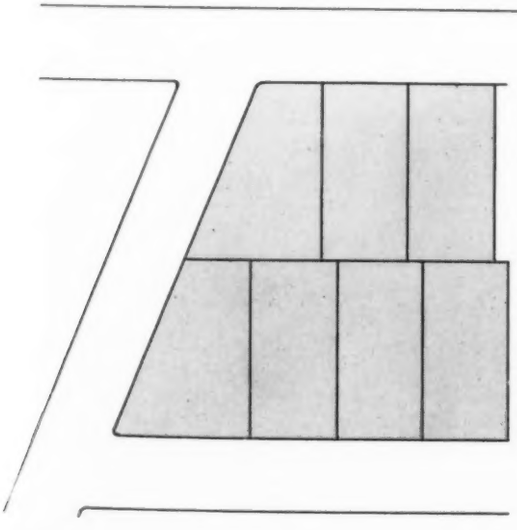
Zoning providing for retail store centers grouped at suitable intervals and important intersections. These centers can be developed with architectural control; parking facilities and sufficient area from which to draw customers to assure necessary amount of business.

Desirable Standards



BAD

Narrow corner lots; lot lines forming bad angles with the street, forcing dwellings to be placed in poor relation to each other and to the street.



GOOD

Corner lots of generous size; lot lines at right angles to street line; permitting houses to be placed in good relation to each other.

ards are the elements that must be present in new residential areas to insure the orderly growth of our cities and the development of stable and desirable neighborhoods.

The procedure that has been set up for the analysis and review of undeveloped subdivisions and the application of the requirements and standards is as follows:

Let us assume that a real estate operator wishes to construct houses in an undeveloped subdivision or that he desires to assure prospective lot purchasers that the property in his subdivision is eligible as security for insured mortgages. He first goes to the local insuring office and applies for the approval of his development. He is there requested to fill out a subdivision questionnaire which is sufficiently detailed to bring out the pertinent facts concerning his property. He must also furnish plot plans and location maps, a copy of the deed with the restrictions, photographs of the tract and plans or photographs of existing or proposed houses and other relevant data.

A valuator familiar with local real estate conditions and subdivision development is assigned by the local office to visit the property, note discrepancies in the questionnaire and to fill out a report outlining his opinion of the property with particular reference to its need and marketability and to the business and financial standing of the operating company. These complete data with the report are then forwarded to the Washington Headquarters where they are reviewed by a member of the staff thoroughly familiar with good subdivision practice and rulings, and recommendations are made on the desirability of the property. Every effort is made to make the criticism constructive and to outline in detail just what must be done before the property can be considered a desirable site where loans may be safely insured.

One of the most frequent shortcomings is lack of convincing evidence of a healthy demand. Statistics of population growth and similar data are not always satisfactory. The surest way in which the demand can be demonstrated is by the actual construction and sale of homes. Therefore, in many cases the Federal Housing Administration agrees to make commitments in a subdivision providing a certain number of homes are actually constructed and sold. In this way the Administration is protected against the risks which are always present when pioneering in a new area and the developer is given the assurance that if his project is sound, funds for the erection of dwellings on easy terms will be provided.

It is also found that seldom are the deed restrictions sufficiently complete. Those that are most frequently missing include: the segregation of certain areas for

specific uses such as single-family dwellings, apartments or retail stores; side yard provisions which would assure dwellings being placed a minimum of ten feet apart; the prohibition of the resubdivision of lots and the erection of more than one dwelling on a lot; restrictions making mandatory the approval by health authorities of the construction and location of septic tanks and wells; provisions for control of the design of the houses and the continuance of the restrictions for a period of at least twenty years.

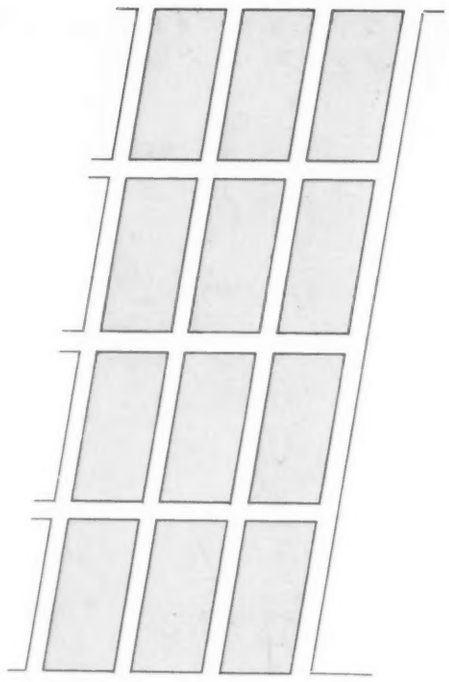
Next to the lack of appropriate deed restrictions and evidence of a demand, the following matters are most frequently found to be in need of correction: weak financial structure, nonconformity to city, county or regional plan, the sale of lots by metes and bounds instead of from a recorded plat, street and utility improvements that are inappropriate or of a type unacceptable for dedication; poor road and lot layout; poor maintenance; and inadequate water and sewer facilities.

In the criticism of the lot and road layout it is frequently recommended that qualified land planners or engineers be employed and, where it is difficult to describe the changes desired, rough sketches are sometimes made indicating the manner in which the layout can be improved. These sketches are not drawn to scale and are but suggestions to be worked out by engineers or planners.

Numerous letters have been received from real estate concerns welcoming these recommendations and giving assurance of their hearty cooperation. There are, of course, a few dealers whose chief object is the quick and speculative sale of lots rather than building up a stable residential district, who object to the standards set, but the vast majority of the reputable real estate men are cooperating splendidly.

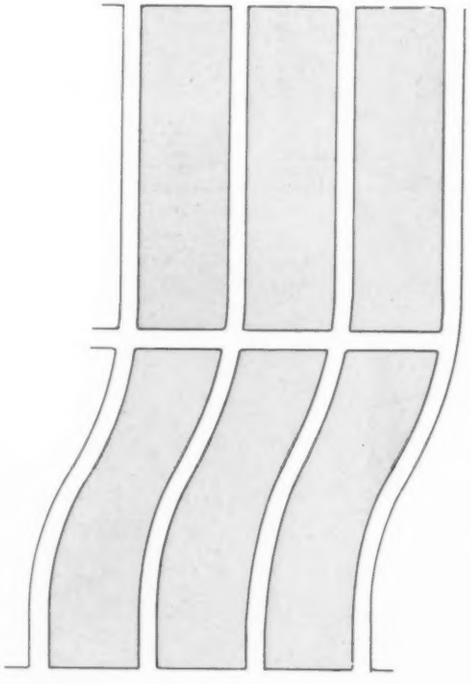
At the present time the Federal Housing Administration is training a group of competent men who will devote their entire time to investigating and checking subdivisions. Through this group it is expected not only to keep a closer check on the market and on dangerous over-development, but also to keep much better track of the manner in which agreed revisions are carried out by the developers. Because of their contacts with the subdividers the objectives of this program will be better understood and the rulings, therefore, made much more flexible.

If this program goes ahead, as there is every reason to expect, it should exert a very material effect toward the well-planned, orderly growth of our cities and the establishment of stable home surroundings and sounder real estate values.



BAD

Monotonous gridiron plan with unnecessary and expensive cross streets; land wasted in streets that could be used for lots.



GOOD

Attractive curvilinear streets with unnecessary cross streets eliminated, resulting in minimum street construction and maximum area for lots.

MODERN PROBLEMS IN SUBDIVISION WORK

WITH CRITICAL NOTES ON SELECTED PLANS

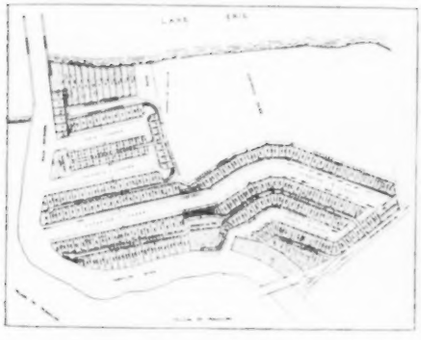
BY CHARLES DOWNING LAY

The obvious superiority of professional work has been the most gratifying feature of my study of these subdivisions picked from all parts of the country and from many examples. America has been too long a country of amateurs and it is pleasing to see that their work cannot be as good as professionals' and that professional standards are rising, in town planning and in architecture as well as in all the other arts.

The permanency of work in town planning and in architecture as it is affected by its technical and artistic qualities is a matter of importance to the developer, the home owner and the banker.

I feel certain that the developments in the following pages which are most skillfully done in planning and in architecture will be the most lasting. We soon grow tired of eccentric styles in architecture and we grow impatient with inconveniences, with dangers and with stupidities in planning, and this weariness and impatience is soon made apparent in declining values, in difficulties in selling.

There is to me no indication of peculiarly American characteristics in any of this planning, but that this will appear I have no doubt. We are not as yet ready to plan our streets for full use of the automobile nor has the automobile probably reached its full development. When that day comes we may find some changes in our town planning and in these minor subdivisions which, after all, are fundamental.



VERMILION, OHIO

VERMILION LAGOONS

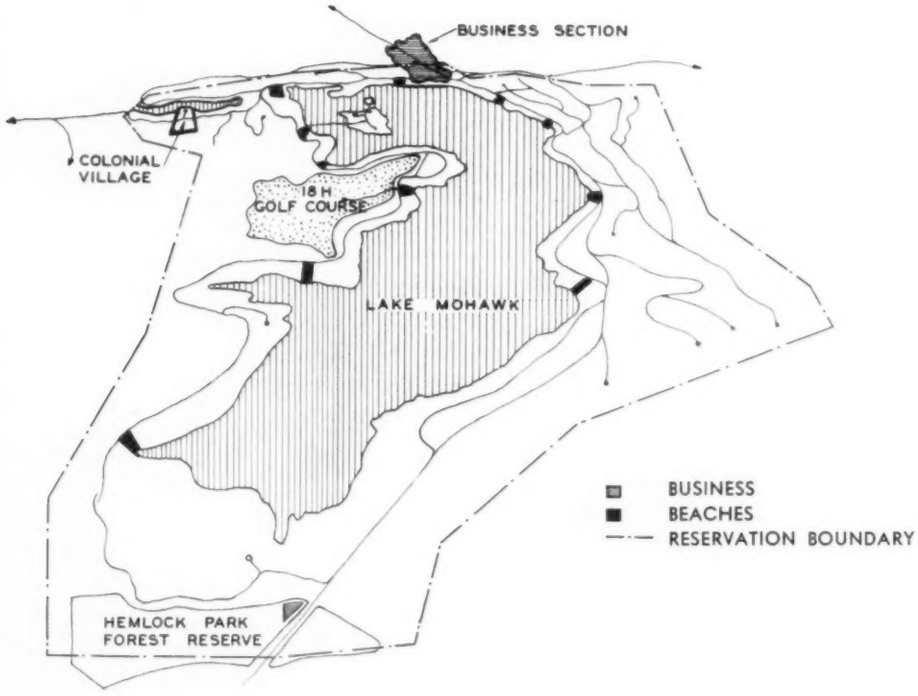
Wells Realty Company, Cleveland, Ohio

Vermilion Lagoons, a waterfront development on Lake Erie, 45 minutes from Cleveland and near Oberlin, Lorain and Sandusky, was conceived and built by L. A. Wells who is in the dredging business. It is a good class development with sewer, water and streets, owned and maintained by the town of Vermilion.

The site of 65 acres was originally a sandy flat between the Vermilion River and the Lake. Lots have been filled by dredging canals 140 feet wide. The lots, 50 feet wide by a minimum of 62 feet, all front on lake or canal and extend back to a narrow roadway. Houses are restricted to the Cape Cod style but there is wisely no minimum cost established. So far the architecture, including beach club and yacht club, is without distinction and shows carelessness in the technique of design. The street and canal layout might have been more skillfully done. There is a beach on the Lake for the use of residents which is nearly 3 acres in area but this, I think, might have been greater without reducing the net return on the enterprise. Lots on the Lake are too deep, 220-300 feet, and this shore front must be impossible for mooring boats. A promenade the whole distance of the Lake front might have been better in the end.

There are but two bridges across the canals which makes boating perfect. The distance to the town, across the river, is shortened for pedestrians by a ferry which runs from somewhere to the town center.

It is admirable and interesting in conception. It must be a paradise for boating as well as a quiet, isolated colony for comfortable living. It is the sort of thing which every planner would like to do but which is seldom accomplished. It is unlikely that this would have been done had the owner not been in the dredging business, and thus entirely familiar with the work and its costs.



LAKE MOHAWK RESERVATION — SPARTA, NEW JERSEY

Arthur D. Crane Co., Sparta, New Jersey
Edwin R. Closs, Architect

Lake Mohawk is at Sparta, in Sussex County, N. J., about 3 miles from Lake Hopatcong. It is at an elevation of about 740 feet and is surrounded by hills about 300 feet higher, or even up to 1,200 feet. The lake is made by damming the head waters of the Walkill River and flooding a swamp. The Walkill flows northward through New York to the Hudson at Kingston. Lake Mohawk is about 3 miles long and ¾ of a mile wide. The line drawing is not a map, but a tracing of the air view to show the location of beaches, the reservation boundary, and the business center.

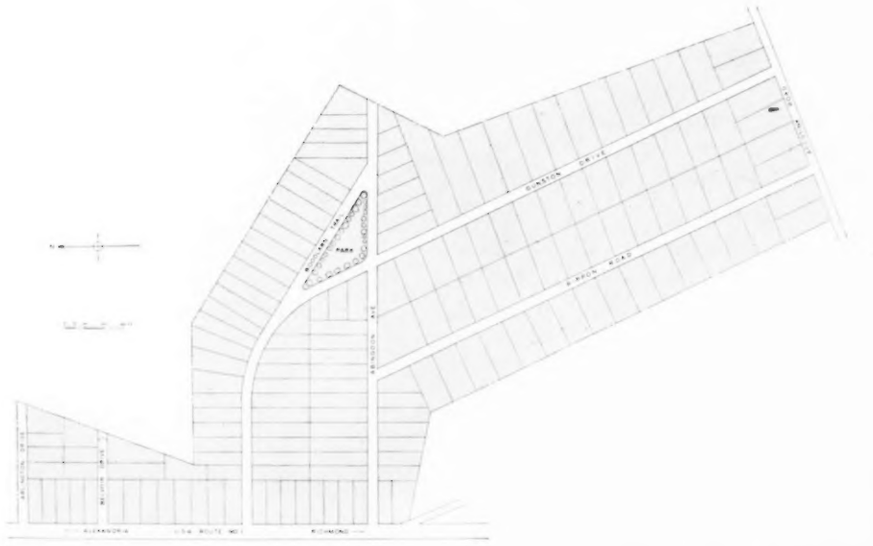
It appears to be a typical development in the American manner; privately owned and operated for profit; the use of the area restricted to lot owners, and with the usual accompaniment of golf course, bathing beaches, etc. I imagine that it is like many other clubs which gain exclusiveness by self-imposed restrictions. Tuxedo was, perhaps, the earliest of these enterprises, but there are many others scattered all over the country, some which started as fishing clubs, like Forest Lake, Pa., and have become prosperous summer resorts. Blooming Grove is another nearby in Pennsylvania. They were carved out of the wilderness, or made up of abandoned farms and at first were likely to be primitive. A clubhouse of logs, where men might spend a week or a week-end shooting or fishing. Cabins owned by members and used at first only when sport was good, became finally summer cottages of considerable importance. They were seldom without their commercial side, whether the land was owned by an individual or by bondholders.

Few of these clubs have been planned in advance and they suffer from the casualness of the work and from the results of haste and expediency. It is true, most of them were intended to be wild and it was doubtless the hope to keep them simple, but as time goes on they become elaborate and incongruities of early planning become conspicuous.

Some, like Onteora and Twilight Park in the Catskills, and many in Maine were started without the sporting motive, in order to create a community which could be controlled and which would be lasting. Many have lasted through changing periods of the horse and buggy, golf, the automobile —in spite of a continuous tendency (made possible by the automobile) to have a permanent summer home in the country.

The history of some of these communities would be an interesting subject for a doctor's thesis in town planning, and their future will be more interesting than their past.

Lake Mohawk gives every indication of being planned in the picturesque style fitting the topography and without any effort to create unity of impression or any sense of organization in design.



HYBLA VALLEY FARMS

ALEXANDRIA, VIRGINIA

Carroll F. Morrison, Engineer, Alexandria, Virginia
V. Ward Boswell, Developer, Alexandria, Virginia

Hybla Valley Farms is on a fairly level tract of land in Virginia, 9 miles from Washington. The entire tract is 180 acres, divided into plots from one acre up. It is restricted and the cost of houses is from $5,000 to $7,000. Each house has a dug well and a septic tank.

It is a subsistence homestead community for white collar workers in Washington, done without government money and therefore significant.

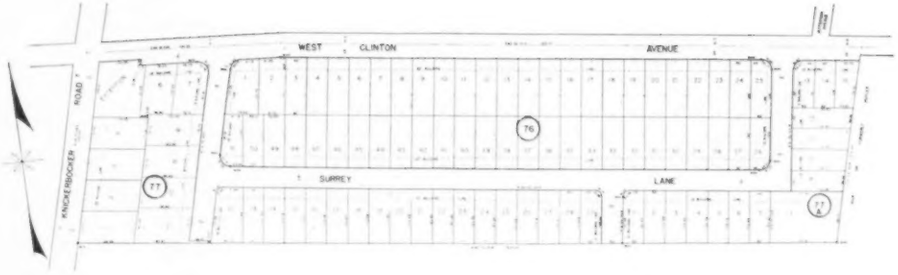
The plan of streets and lots seems adequate, but not interesting or well studied. What reason there might have been for the dead end on Abingdon Avenue, Belvoir Drive and Arlington Drive, I do not know, but I am inclined to think that in a difficult and irregular plot like this it would be better to disregard adjoining property, as has been done on the west, and make the layout self-contained. This possibility is suggested by the lines of Rippon Road and Gunston Drive, which are continuous from one existing highway to the other.

The lots on Arlington Drive and Belvoir Drive are isolated from the rest of the community, and are less desirable on that account.

I would like to see more of a center than is suggested by the Park. A community of a hundred or so families is enough to support a small shopping center, a school and, perhaps, a church. There is no more impressive or even important site for a public building, and no sufficient provision for a center, with all that such a thing implies in space for parking cars and for growth, which might be considerable as the surroundings develop. A weakness of American town planning, as it seems to me, is in the failure to provide good sites for public buildings.

I don't know the character of the Alexandria-Richmond U. S. No. 1, but if it is a busy road it is not a good place for shops, and I would prefer to face the lots all toward the interior streets.

MODERN PROBLEMS IN SUBDIVISION WORK

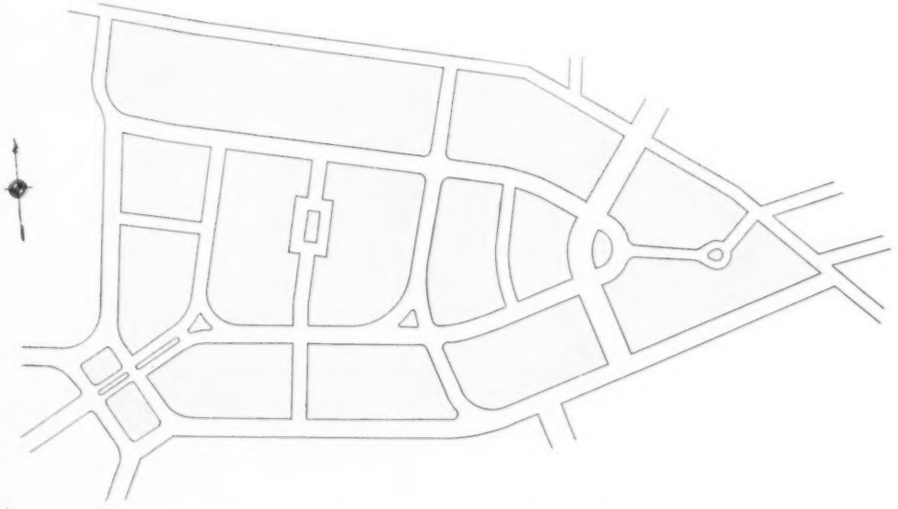


LYLEWOOD HILLS — TENAFLY, NEW JERSEY

Reis Homes, Tenafly, New Jersey

Lylewood Hills, Tenafly, N. J., is a subdivision of 95 lots in an old community. The promoters have recognized the terrible cluttered effect and the destruction of back yards through filling them with garages, and require that all garages be attached to houses.

Lots are 50 x 135 feet, with some larger. The most significant thing about this development is the building of good looking and small homes in quantity to sell for $50 a month. There is nothing in the layout of lots and streets except a further subdivision, in an inevitable way, of a plot too large for present use.



BROADACRES — GLENS FALLS, NEW YORK

John Nolen, Landscape Architect, Tom Rogers, Agent: Glens Falls, New York

Broadacres, Glens Falls, N. Y., was started about ten years ago. Lots, 50 x 150 feet for the most part, sell for $2,000. The layout was done by John Nolen and has the professional touch. Like all work of town planners, it cannot be criticized fairly from the plan because the relations to the surrounding streets, the adaptation to topography, and the views from the lots cannot be known from a lot plan. It is probable that the blocks would be longer if it were done today and that the street plan would therefore be simplified. There is an interesting variation in street widths, though it is impossible to see from the map why Roosevelt Avenue should be 100 feet wide and stop on Coolidge which is 71 feet.

The difficulties and discouragements of a planner working for a promoter are enormous, first because the promoter is inclined to think of areas instead of thinking of lot units and is therefore penurious in the use of property. He is also inclined to favor gadgets in the plan, and these gadgets may be too wide avenues, too short blocks, tricky interior squares, park strips in the center of a street, or what not.

It is hard sometimes to persuade a promoter that the cost of filling a lot, for instance, may nearly equal the selling price of the lot, or that the cost of property put into park or plaza space can be as well added to the cost of lots for sale as the space used for streets can be.

If the venture is at all reasonable in the existence of a demand at the price required to come clean with a reasonable profit, it should be easy to persuade a promoter that a slight decrease in profit might be more than made good by ease and quickness of selling and thus in a reduction of selling costs. I cannot believe that quality which is determined by good design, by good construction and by generous space devoted to public use is not a good selling point, and that it cannot be made to pay an extra dividend.

ROSEDALE GARDENS DETROIT, MICHIGAN

William Pitkin and Seward Mott

Landscape Architects

Rosedale Gardens is an interesting development because it seems to show the recognition of the value of quality and the inadequacy of the old-fashioned rectangular layout. One quarter of the tract shown is the standard rectangular layout, but the new three quarters by William Pitkin, Jr., and Seward H. Mott of Cleveland is entirely modern in conception.

It has in the same space one large boulevard, instead of seven streets, which gives access by means of cul de sac streets to an equal area. The cul de sac for residential districts will undoubtedly be a permanent feature of American planning for residential areas. No pedestrian walk from the cul de sac to the park is apparent, though it seems essential; the alleyways do, however, connect with this park strip.

The plan seems to me interesting and intelligent and technically competent. Further study will, I think, lead to some feasible scheme for avoiding the great depth of some lots, and for a uniform arrangement along the central Boulevard. It is a little disturbing to have the lots for a long distance with their sides to the Boulevard and then to come upon 6 facing it, and then two more facing. The corner lot in a cul de sac is always troublesome because of limited frontage, and the trouble is not made less by joining two cul de sacs to make a loop. Yet I believe the loop is more convenient and does not increase traffic hazards to any considerable amount. The one-way street which has simplified traffic so much in cities has never, so far as I know, been adopted as a principle of design in residential areas. It seems to me to offer considerable freedom in design and some saving in space.

The next great improvement in residential areas, which I have long advocated, is a complete separation of motor and pedestrian traffic, so that the front of the house faces a pedestrian parkway and the back a motor road without sidewalks. Simple pedestrian bridges would give a complete separation. Children play where they will, but I think the inclination to play on the pedestrian street and to avoid the motor road would be strong.

The Rosedale Gardens plan has corner entrances—four of them—which I think unfortunate. They are difficult or impossible to make pleasing in appearance, and they complicate traffic regulations. Central Park in New York has several which have always seemed a mistake in design. In the case of Rosedale Gardens they may have been adopted to save distance by cutting corners, but I think the saving is not worth the disfigurement they cause.

Business in this plan seems to be taken care of in the old part, along Merriman Street and Plymouth Road and at the corners under apartments, but I would like to see some provision for it in the very center at the junction of West Chicago Boulevard and Pembroke Road. My ignorance of conditions on the ground may lead me into a merely rationalistic decision. The spot is not conveniently accessible at present and it might be wrong to make it so.

Would it be right or not to treat this comparatively large tract as an isolated, self-contained unit? To consider it as a complete town or community which would be left only by the men going to work or by their wives going shopping in the big center? The present design seems to be based on the assumption that every one leaves the community for business, for amusement, and for shopping.

MODERN PROBLEMS IN SUBDIVISION WORK

KENMORE **MUNCIE, INDIANA**

The Bender Company, Muncie, Indiana

Kenmore, at Muncie, Indiana, is a standard 50-foot lot subdivision with some curving streets cleverly fitted to a standard rectangular plan. The 50-foot lot, however, is only a unit and the lots, as sold, are always larger as they must be for such large and substantial houses.

The houses are, however, a little fantastic, as if the lady client had read too much of the woman's page in the papers, or studied the interior decorating magazines too hard.

All American designers, outside of the great names, seem lacking in technical skill which, if they had it, would prevent many of the clumsy, stupid things they do in design of streets, of houses, of gardens, of pictures, and sculpture, signboards and posters. More of us have got to take these things more seriously and have some conscience in our work. It is not enough to design a house that will be tight and warm in winter, it must also show skill and rectitude.

GARDEN CITY

GARDEN CITY, LONG ISLAND

Mott Brothers, Hempstead, Long Island

This development on Long Island is being undertaken by Mott Brothers, who are very active in the New York region. The subdivision is more notable for its selling schedule, price range and individual houses than for its plot plan. The site is relatively flat and treeless, using a 60-foot minimum lot. The streets, utilities and landscaping are all done by the developing company, the cost being prorated between the homes and included in the initial purchase price of house and lot. The development is quite completely restricted.

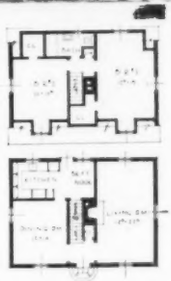
Like most of the active subdividers in this region, Mott Brothers furnishes a complete house-building service—design, construction, landscaping: to this they have added an interior decorating service, free to buyers. They have an architectural staff which designs each house to meet the specific requirements of each client. (The client may engage his own architect if he so desires.) All houses are built by the construction department, using a standard set of specifications which strikes me as being unusually complete and high-class:

All Houses Built under "The Reynolds Certified Specification System"

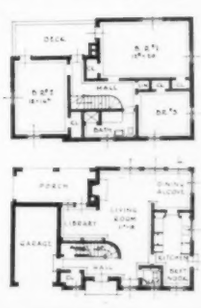
Poured concrete foundations
Steel girder and columns
Reynolds Metalumber framing
Bangor slate roof
Double oak floors
Copper flashings, leaders and gutters
Campbell steel casement windows
Copper piping and hot-water boiler
Reynolds plumbing fixtures, colored
Stall shower with chromium framed glass door
Fully tiled bathroom, walls and floor
Steel medicine cabinet
Inlaid linoleum on kitchen floor
Kitchen cabinets with flush doors
Wood-burning fireplace
Insulation by Reynolds metallation
Reynolds oil-burning unit and Reynolds air conditioning
Reynolds Ecod metal plaster base
McPhilbin lighting
Chase solid brass and copper water pipes and fittings
Attached built-in garages
Aromatic cedar closets

By this method of construction they are able to retail the houses shown at the prices listed, complete with landscaped lots. Of the three houses shown, No. 2 strikes me as an especially interesting one, though the exterior leaves much to be desired. The first floor has been very carefully designed to concentrate all service features on the street side, and the living space on the garden side flows together well. All three houses show good planning and indicate the responsiveness of operative builders to changing buyer demands.

1 $5,500

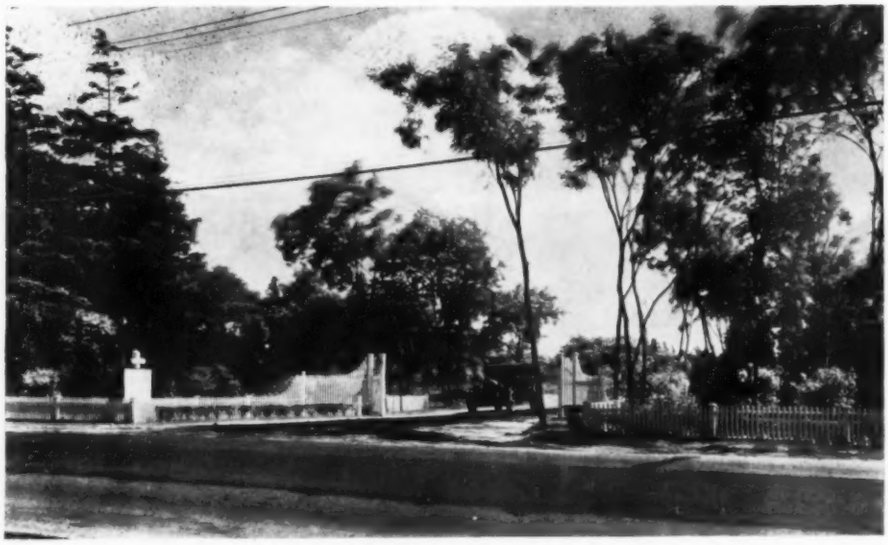


2 $6,750



3 $7,000

MODERN PROBLEMS IN SUBDIVISION WORK

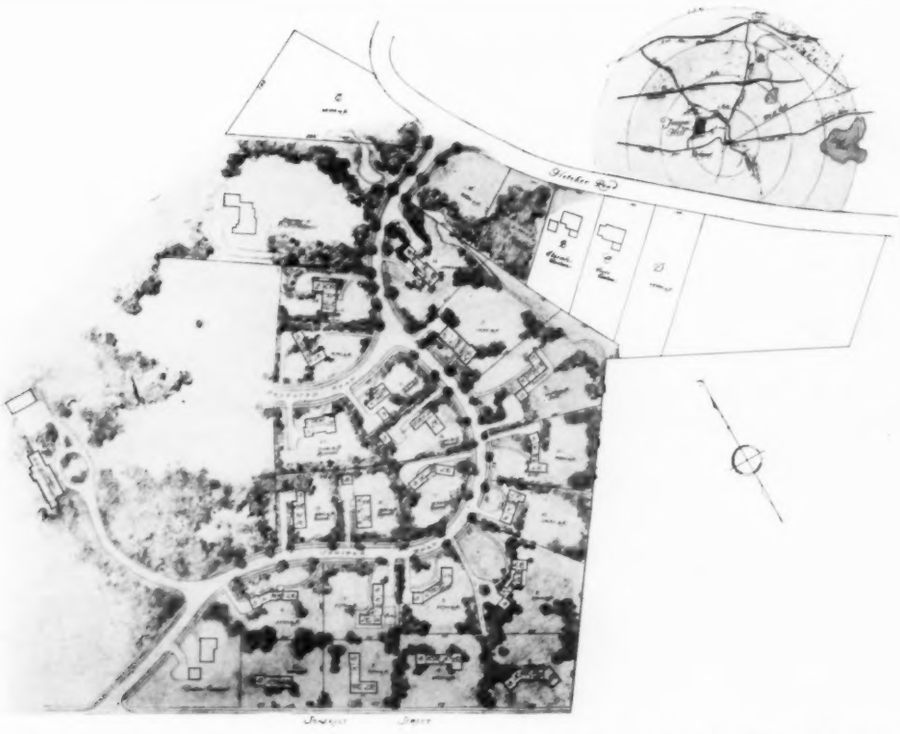


HARBOUR GREEN — NASSAU COUNTY, LONG ISLAND

Harmon National Corporation, New York City

Harbour Green is located on the South Shore of Nassau County, Long Island. It is unfortunate that no plot plan is presented as the project has an unusual shape and is well planned. An L-shaped tract, with a narrow frontage on an arterial highway, it runs back and widens out along an ocean frontage. This problem of access through the narrow section of the development is well handled. The character of the entire subdivision is simple and countrified. Curbs and sidewalks have been omitted, effecting economies for the buyer and contributing to a rural atmosphere. The native growth of locusts and cedars has been remarkably well preserved. Lots are a minimum of 100 x 100 feet, and ample restrictions as to set-back and height give a uniform openness to the project. The public areas of the subdivision are maintained by an annual assessment on each lot holder, whether he has built or not. This is an admirable provision, provided the owners have sufficient control over the expenditures of such a fund.

Developed in 1932 by the Harmon National Corporation, this subdivision indicates the possibilities of planning in the price range of $6,000 to $10,000. This company offers a complete home-building service flexible enough to fit individual requirements, standardized enough to effect economies impossible in individually built homes. Besides architectural, building and landscaping services, included in the purchase price, the company maintains a 1-year maintenance service.



JUNIPER HILL **BELMONT, MASSACHUSETTS**

Olmsted Brothers, Brookline, Mass.

Juniper Hill at Belmont, Massachusetts, is by Olmsted Brothers. It is a high-class suburban development in the best naturalistic manner of which the designers say: "Juniper Hill is an attractive cedar-clad upland, with a sheltered southeasterly aspect and a commanding outlook over Cambridge, Boston, and Boston Harbor. The area is small (about 12 acres) but the terrain and layout are such that the distant view can be practically assured from each lot, a fine private estate on the west gives protection and tone to the property, and the whole neighborhood is zoned for single-family residences.

"Only three and a half miles from Cambridge and Harvard College, and seven miles from Boston, it is a particularly convenient location for suburban living.

"The lots average about half an acre in area with a few larger units. Land cost, development cost, and carrying charges come to about 18 cents a square foot, and it will probably be sold at from 18 to 25 cents or so. The intent is to provide opportunity for first class modest homes for a total investment (house and lot) of from $20,000 to $30,000.

"The project is protected by carefully drawn restrictions aiming to assure a homogeneous effect of distinctive quality in both the architectural and landscape developments, and protection for each lot owner against the damaging influence of inferior homes close at hand. One house is to be built for sale immediately and the grounds developed, in order to illustrate and fix the standard which the grantor has in mind. All plans submitted by individual lot owners must be approved by the grantor and must accord with the general character established for the community. Olmsted Brothers are serving as general planners and directors for the project. As the grantor's agents they are responsible for effective cooperation among designers, on work being done by the grantor, and in so far as possible, for the beauty and general agreeableness of this community."

VALLEY CREST
LA CANADA, CALIFORNIA

Ralph Flewelling, Architect

C. H. Cheney, Consultant

Valley Crest at La Canada, fifteen miles from Los Angeles, is the work of R. C. Flewelling, architect, and C. H. Cheney, city planning consultant. It is a community association on a tract of about 150 acres to be divided into ¼-, ¾-acre plots. It is fairly steep, being 10-12½% in most places, with a total rise of about 300 feet.

Deep gullies (15-20 feet) running across the contours are used for park strips, varying in width from 50-200 feet. There is, as it appears to me, no consistency in the planning. Some roads run straight up the slope; others take an easier gradient; but all are cul de sacs.

The plaza, which is the main entrance and may be considered the point from which all roads start, is on land sloping 10 per cent.

Each lot connects at the back with a walk and a park strip, even where there are no gullies. There seem to be no walks along the motor roads.

Comment on an informal scheme like this, without greater knowledge of the conditions, is impossible.

WINDEMERE
SEATTLE, WASHINGTON

Whitworth, Rutherford & Harris, Engineers

Windemere, on Lake Washington at Seattle, is a high-class development of 135 acres set up into 221 lots, fully restricted and fully improved. The prices range from $5,000 to $25,000.

The photographs show a charming country and expensive, well-designed houses which, however, are not uniform in cost. The minimum costs are in one district on 60 and 80 by 120 and 130-foot lots—$5,000; these are furthest from the water. Next is a $6,000 district which in the plans, and for reasons unknown, breaks into an $8,000 district. The $10,000 range also breaks into the $12,500. The $15,000 and $25,000 districts are side by side and have lake frontage with lots 100 or 120 feet wide and 470 and 614 feet deep. It is easy to guess that width of lot and, perhaps, the orientation or outlook determine the minimum building cost. The deep water-front lots are obviously arranged to give a building site a hundred feet or so deep on an old table 25 feet or more above the lake.

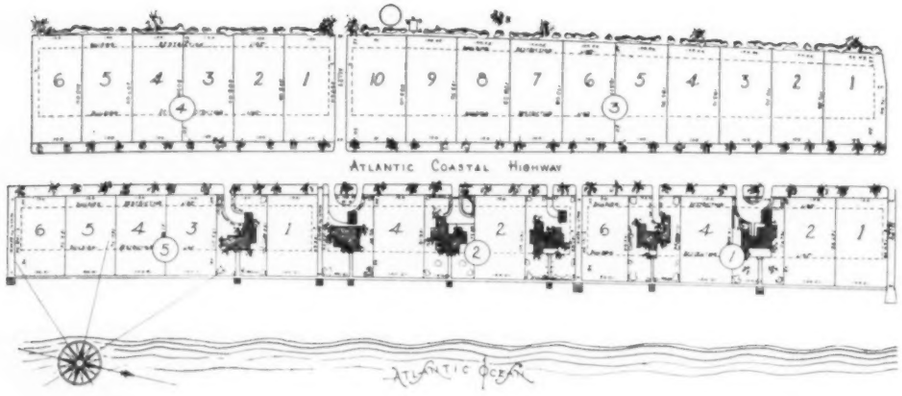
This all seems right to me because it bases lot costs and improvement restrictions on the real values of shore, outlook and situation or environment. The property adjoins Windemere Park which may be a public park. There is no public area in this subdivision and apparently no thought of community enterprises or gatherings or sport, though the population might be

57 in $5,000 houses		
51 in $6,000	"	
69 in $8,000	"	
18 in $10,000	"	On the basis of 1 house to a lot
12 in $12,500	"	
8 in $15,000	"	
9 in $25,000	"	
8 lots unclassified		
232 houses		

The planning of the lots and streets is not too intelligent and, though not dumb, technically, in its details it is lacking in skill. There are some bad lots, a number of clumsy street intersections, and a street plan which necessitates two lanes for pedestrians: alleys which seem unnecessary in a district of this high character occur in 3 blocks, but not in all. Many lots 200 feet in depth have a street at each end; others, 248 feet deep or more, have a street at each end but are undivided. Grades, as shown on some of the streets, are as high as 20%. There are too many short blocks. It is apparent that more study of precedents adapted to these difficult conditions would have produced a better layout with fewer roads and more and better lots.

The execution of the work, with its concrete roadway curbs and sidewalk, seems exceptionally good.

MODERN PROBLEMS IN SUBDIVISION WORK



PONTE VEDRA — JACKSONVILLE BEACH, FLORIDA

Telfair Stockton & Co., Jacksonville, Florida

Ponte Vedra, Jacksonville, Fla., is a shore resort with golf club guest houses and building lots.

The architecture of cottages and houses is simple and competent. The most unusual feature is the location. It is a strip of land 150 feet deep between the Atlantic Coastal highway and the ocean, cut into 100 lots. Another strip, 200 feet on the other side of the highway, is similarly divided. It might be called strip planning and, of course, it offers few opportunities for variety and no chance for picturesqueness if it were desired.

• • • • • •

HOPE RANCH — SANTA BARBARA, CALIFORNIA

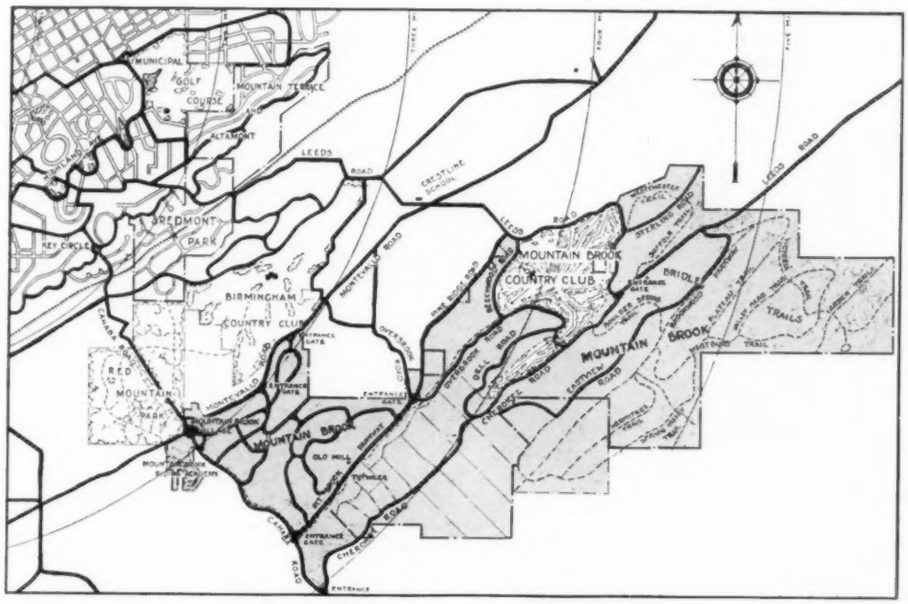
H. G. Chase, Agent, Santa Barbara, California

Hope Ranch, four miles west of Santa Barbara, California, has land at two prices—$1,800 per acre north of Vieja Road and $5,000 per acre south.

There is a golf course, hunt club, polo field and beach club, all on a hilly district where lemons grow.

The smallest separate plots seem to be one acre but much of the area is in 5 or 6-acre tracts with some as large as 30 acres.

The roads in a subdivision of this character are chiefly utilitarian, being designed to provide access in a rather rough terrain to picturesque building sites and having no part in an organized design. If they serve this purpose well enough and also are agreeable to drive on and give pleasant views of the country and the sea, no more can be asked. No one can say with conviction that it has been done badly or even that it might have been done better. If the best sites have been developed for residences and if the roads are fairly easy and safe, after that their design is almost wholly determined by their cost in one alignment or another and scarcely at all by any reasons which would possibly be called aesthetic.



MOUNTAIN BROOK BIRMINGHAM, ALABAMA

Jemison & Co., Birmingham, Alabama

Mountain Brook, four miles from the center of Birmingham, Ala., is a sophisticated naturalistic design by W. H. Kessler, landscape architect. A charming country club in the community was designed by Aymar Embury, II, and Miller & Martin.

I judge it to be on the southerly limits of the Appalachians in a mixed forest of hardwoods, characteristic of the Appalachians, intermixed in places with pines. No lovelier setting could be imagined, and it seems to have been done with feeling by Mr. Kessler. The houses are of a high class and well designed.

MODERN PROBLEMS IN SUBDIVISION WORK

PALOS VERDES ESTATES
LOS ANGELES, CALIFORNIA

Olmsted Bros.; and C. H. Cheney, Consultant

Palos Verdes, twenty-two miles from Los Angeles, is the well-known development done by Olmsted Brothers with Charles H. Cheney as consultant. The prices of lots are from $2,800 to $24,000. One-half of the total area is in parks, school grounds and streets. There are 1,750 members of the community association, a public library, an art gallery, a women's club. It is zoned mostly for single-family detached dwellings—3,200 acres of a total of 16,000 have been developed. The land is along the ocean which is skirted by a drive. There are few building lots between the drive and the shore which seems to be everywhere open to the public. Inshore from this are minor roads parallel or leading up the hills.

PORTFOLIO OF HOUSES FOR REALTY DEVELOPMENTS

HOUSE OF FRANK A. PIRNAK — ROCKVILLE CENTRE, LONG ISLAND

Photograph by Murray M. Peters

HENRY TITUS ASPINWALL, ARCHITECT

Concrete foundations, wood frame and brick veneer walls, slate roof. Wall finishes: plaster and wallpaper; tile in bathrooms. Oak floors; tile in bathrooms; linoleum in kitchen. Celotex insulation. Heating is by steam. Color scheme of exterior: red brick, white wood trim and shingles, black slate roof. Sash are double-hung and of wood; screens, copper. Square plan adopted for such advantages as economy in plumbing and minimum required steps. **Cost: $9,000.**

Photographs by Murray M. Peters

HOUSE OF FRANK A. PIRNAK, ROCKVILLE CENTRE, LONG ISLAND HENRY T. ASPINWALL, ARCHITECT

FIRST FLOOR PLAN

SECOND FLOOR PLAN

"BETHANY WOOD" — BETHANY, CONNECTICUT

A RESIDENTIAL COMMUNITY DEVELOPED BY J. COX HOWELL — L. BANCEL LaFARGE, ARCHITECT

GENERAL PURPOSE

To establish a residential colony on the outskirts of a considerable city, with all the major advantages of both city and country and no great distance between them. It should be small enough for a modicum of privacy—small enough to be homogeneous and easily administered. At the same time it must be large enough to provide an interesting and satisfying society within itself. Twelve to fifteen families seem at present to be the optimum number, which allows an average of approximately four acres to each family on the tract that has been acquired, including playgrounds, roads, and similar areas. The faculty of Yale University, already fairly well represented in the neighborhood, is used to set the social and economic standards.

COMMUNITY INTERESTS

As the group grows in size, certain community projects will be suggested, such as expert supervision of children, exchange of books and periodicals, cooperative buying of standard supplies and services, and the development of recreational facilities. A non-profit corporation composed of the landowners will form a convenient means for carrying out such plans as meet with general favor.

FINANCES

The financial basis of the project is not immediate profits but long-time investment. Besides a normal return from the portions that are sold, determined by cost and market, an earned increment is expected when the portions now held in reserve are opened for use. The reserve is assessed as woodland and the tax rate is 20 mills, so the burden is not large. In order to build up an earned increment in the reserve, the first few houses and lots will be sold at, or below, actual cost. Under these circumstances it has seemed best not to undertake any liability at the start, and the title is free and clear.

A more impressive display could be made by mortgaging part or all of the property; at the same time it would add to the carrying cost and involve complications in re-financing and releasing portions to be sold. As it is, there is nothing but the fee simple to be considered. This policy also adds to the safety of the venture, and to the possibility of accommodating buyers.

Little difficulty is anticipated in financing buyers of the kind that are likely to be attracted. Yale University will lend money for home-buying to any of the faculty on very favorable terms. For the convenience of others, arrangements have been made with one of the leading insurance companies to furnish whatever mortgage money is required.

Some care will be taken to protect inexperienced or over-ambitious buyers against the dangers of excessive financial obligations, even if sales are lost thereby.

GENERAL POLICIES

Throughout the undertaking, an effort has been made to avoid extremes and to seek instead the point of diminishing returns. For instance, the houses that have been built are not incombustible, but great care has been used to reduce the fire hazard without unduly increasing the cost of construction. In the same way, a balance has been sought between capital outlay and the cost of maintenance and operation.

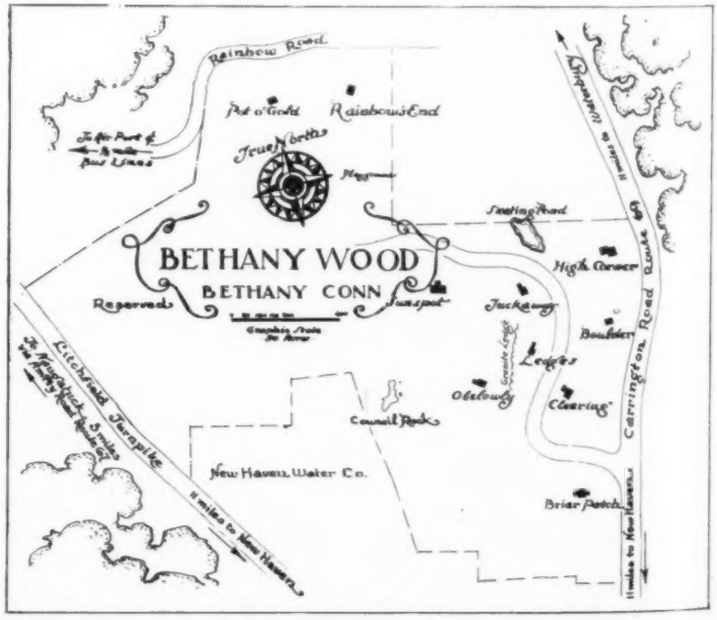
The same philosophy applies to all personal relations. The measure of fitness of an applicant to join the group is not wealth or occupation or social position, although those factors all bear on the subject. The important element is a disposition and ability to maintain friendly and harmonious relations with all concerned.

Another phase of the same philosophy appears in the endeavor to keep all proposals as elastic and plastic as possible, so as to adjust and accommodate them to changing conditions. Even major plans are in the nature of questions written in chalk on the blackboard, until the necessity arises for positive action. Accordingly, although the property has been thoroughly plotted with reference to house sites and all the concomitants of driveways, water, sewers and the like, it has not been laid out in plots or lots, and anybody may buy anything that promises to be mutually satisfactory.

In line with this reasoning, public sentiment and social pressure will be relied on to a large extent instead of limitations written into the deeds. Restrictions in this undertaking will have to do with the number, character, and placement of buildings, but not with their cost or design; and will limit livestock to domestic pets.

LOCATION AND PHYSICAL FEATURES

The property lies between an old and a new highway, with frontage on both and on an unimportant dirt road that joins them. By the new highway, Route 69, the distance to New Haven Green is eleven miles and to Waterbury ten miles. The land is a high wooded ridge (altitude about 600 feet), roughly crescent-shaped, opening to the south and with higher land to the north. Each arm fronts on a highway, and the two arms embrace a deep wooded hollow that belongs to the local water company and so is not likely to be disturbed. The views embrace West River Valley and the West Rock Ridge (a State Park), and on clear days there are glimpses of the Sound with the dim line of Long Island beyond. The geological formation is a bastard granite. Oak predominates in the woods, five varieties being represented, with the usual hardwoods and undergrowth.



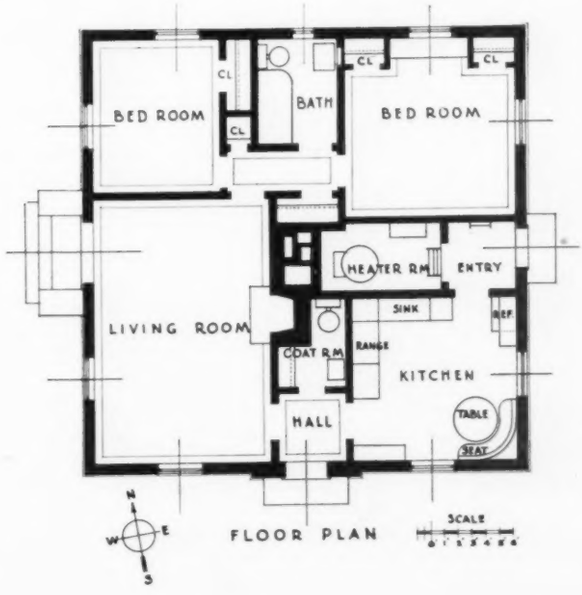
Photograph by Frederick Bush

IMPROVEMENTS ALREADY MADE

A stone-filled gravel-surfaced road has been built, 17 feet wide and about 850 feet long, with branches to three houses; in all, about 1,300 feet of roadway. An eight-inch well has been drilled, 195 feet deep, and equipped to supply six houses with water. It overflows two gallons a minute; the water is rated 42 in hardness in a scale in which anything under 50 is called soft; 51 to 100, medium soft; 100 to 200 medium hard, etc. The capacity at the 100-foot level is 30 gallons a minute.

An electric power and telephone line has been brought into the property, so placed as to serve eight possible sites and to be easily extended.

Three houses have been built. The smallest—stucco with slate roof, insulated with rock wool, oil-burning air conditioning furnace, about three acres of woodland—represents an investment of about $7,300. The largest, with 19-inch walls of quarried stone, can be equipped and finished to suit a buyer for about $18,000, with an acre and a half of woodland. A plot of about two acres has been assigned to the third house, which is of common brick laid by the Ideal method; its interior also can be arranged and finished to please a buyer, at a total cost of about $14,000.



Photograph by Frederick Bush

SCHOOL FACILITIES

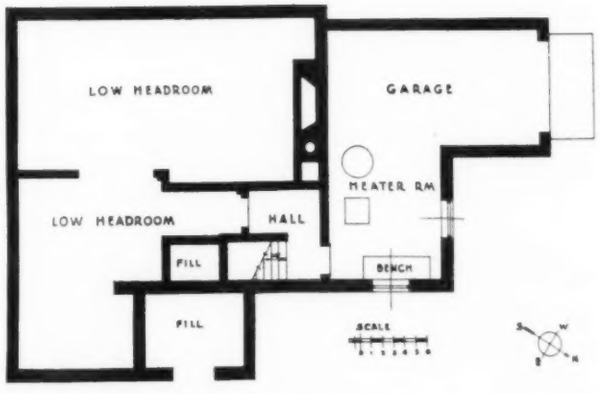
The town in which the property is located transports school children to its new, well-equipped grade school. High school students are taken to New Haven, Waterbury or Naugatuck, according to circumstances, at the town's expense. There are, of course, several private schools within easy reach by car. A small pre-school or nursery group may be anticipated on the property in the course of time.

DOMESTIC SERVICE

Tentative arrangements are being made with a few young girls living in the neighborhood to supply whatever domestic service may be required. Each applicant will be carefully checked as to home conditions, habits, associations, and so on, and then encouraged and helped to acquire the necessary training. Not very much can be done until a larger demand has been established, but the outlook is promising.

OUTDOOR SERVICE

A small farmer living nearby will supply occasional semi-skilled labor and will make regular rounds to remove garbage, papers, and other house wastes. This service can be increased and extended as occasion requires.



CELLAR FLOOR PLAN

A MARK TO SHOOT AT

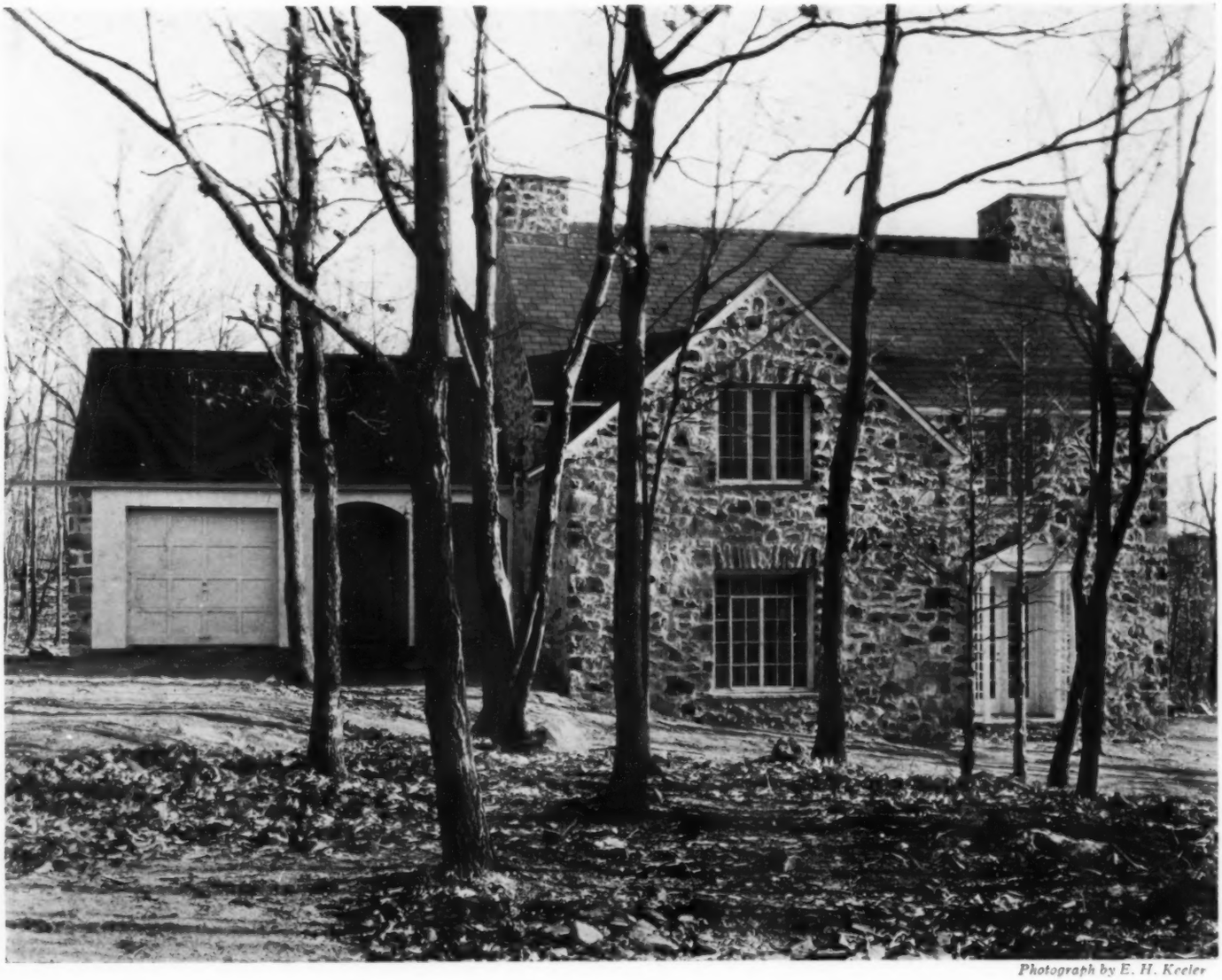
A somewhat isolated colony like this is wholly dependent on its cars. Good roads and good low-priced cars have made

Photograph by E. H. Keeler

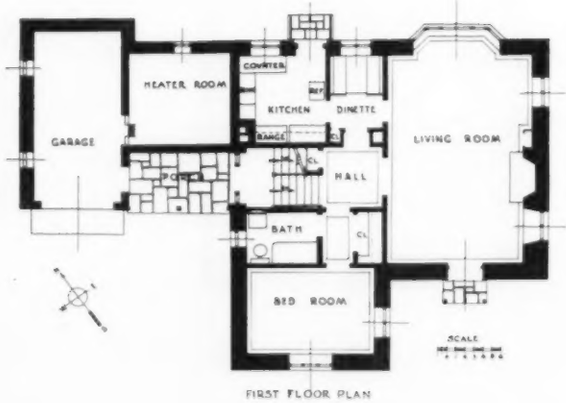
FIRST FLOOR PLAN

SECOND FLOOR PLAN

it possible; without them it could not exist. Each family will have at least one car, some will have two or three, friends and guests will often bring their own cars for varying lengths of time. To attach two or three car stalls to a house of modest size is to distort it, to make the tail wag the dog. To provide car space in separate garages is to litter the landscape with outhouses. As a possible solution of the problem, a dignified building is being designed with six stalls,



Photograph by E. H. Keeler



FIRST FLOOR PLAN

SECOND FLOOR PLAN

so placed as to serve four or five houses very conveniently. Stalls will be rented at cost by the day, week or month. Such accommodations would supplement whatever car space each house affords, according to the needs of each family. The cost is no more, the architectural problem is simplified, and the convenience is greatly increased. The question that remains to be considered is how well the public will take to such an arrangement.

HOUSE OF MR. AND MRS. GORDON V. KUEHNER **WEST HARTFORD, CONNECTICUT**

FIRST FLOOR

SECOND FLOOR

KEITH SELLERS HEINE
ARCHITECT

Frame construction with front wall of first floor in brick veneer. **Insulation:** 3½" rock wool on outside walls and second floor ceiling. **Heating:** Gar-Wood conditioned air. **Cost** (completed in 1935): **$13,500.**

Photograph by Murray M. Peters

PAUL ARNOLD FRANKLIN

ARCHITECT

HOUSE OF MR. AND MRS. PAUL NICHOLSON

PORT WASHINGTON, LONG ISLAND

Photograph by George Haight

HOUSE OF PRENTISS FULMORE

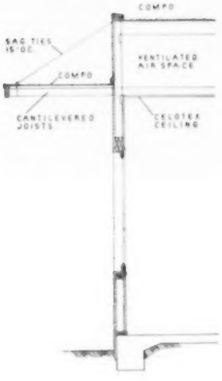
ALTADENA, CALIFORNIA

VAN PELT AND LIND
ARCHITECTS

Concrete foundations, wood frame (stucco and boarding), roof of split shakes. **Floors:** oak and rubber tile. **Wall finishes:** plaster, wallpaper, tile and wood boarding. Aluminum foil insulation on walls and roof. Hot-air heating. Air conditioned. General Electric kitchen. **Exterior color scheme:** oyster white and yellow ochre; roof, natural. Wood sash, double-hung; copper screens. **Cost: house, $10,300; landscaping, $800.**

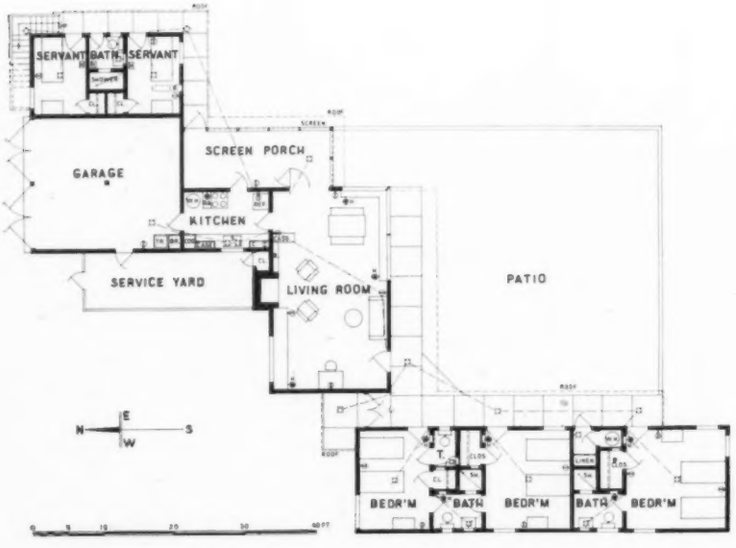
HOUSE OF H. U. BRANDENSTEIN

PALM SPRINGS, CALIFORNIA



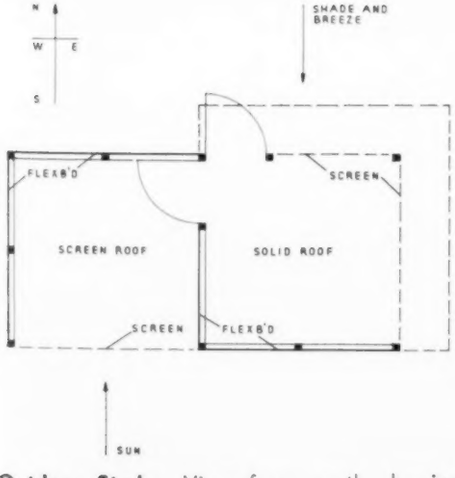
WALL SECTION showing room insulation by means of Celotex ceilings and ventilated air space above. Outdoor passages from one part of house to another are roofed against occasional rain by roof supported on extension of ceiling joists.

VAN PELT AND LIND, ARCHITECTS



Floors: cement. **Walls:** wood frame plastered on both sides. **Roof:** ceilings of Celotex; three-foot ventilated air space between ceiling and Pabco 20-year gravel covered roof; ceiling joists cantilevered to form porch-passages. **Windows:** stock Truscon steel casements. **Doors:** wood, combination screen and hinged casement. **Heating:** Thermador, circulating type, recessed electric wall heaters. **Color scheme:** exterior walls, sand color; walls under overhangs, blue-green; porch and overhang ceilings, cerulian blue; doors and windows, aluminum paint. Interior, floors, tan; walls, natural gray plaster; ceilings, cream; doors and windows, sage green. **Hardware:** dull chromium. **Curtains:** light canvas with inside face of light green, outside face, terra cotta. **Cost** (completed January, 1936): **$3.08 per square foot.**

SCREENED PORCH OFF LIVING ROOM
USED FOR DINING



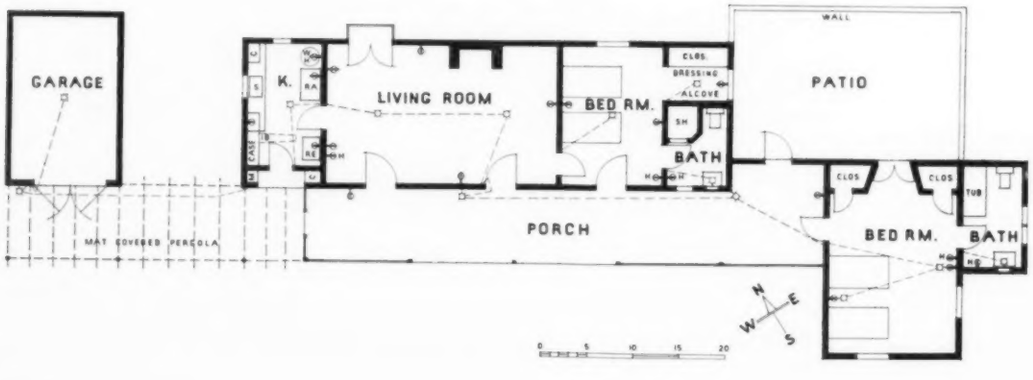
Outdoor Study. View from north showing shaded sitting area exposed to breeze. Cold weather area is exposed to sun above and on south, protected from north wind. Hot weather area shaded and exposed to north breeze, protected from sun on south and west. Both rooms are screened against insects. The study is located away from house for privacy and quiet.

HOUSE OF CHALTON POWERS

PALM SPRINGS, CALIFORNIA

Construction: 2 x 4 studs, 16" on center, plastered inside and out; high, open trussed wood ceilings; roof of cedar shingles, 15 pound ragfelt between each course. **Floors:** cement with integral color in top dressing, waxed; no cement markings, expansion taken up by Malthoid strips in dry joints at partitions. **Doors:** exterior, wood, French type; interior, wood, stock three panel. **Windows:** stock wood casements. **Heating:** water heater, range, portable room heaters, all electric. Kitchen counter of rubber tile. Crane plumbing fixtures. **Finishes:** cold water paint on plaster, wood ceilings and walls; shingles painted with Cabot's Collopakes; woodwork, oil paint. **Cost: $2.75 per square foot.**

VAN PELT AND LIND
ARCHITECTS



FLOOR PLAN

Photograph by Hedrich-Blessing Studio

HOUSE IN JEWEL TEA PARK — BARRINGTON, ILLINOIS

WALCOTT AND WORK
ARCHITECTS

Concrete foundations, wood frame walls; wide shingle facing. Shingle roof. Wall finishes: plaster, wallpaper and paint. Oak floors; tile in bathroom. Insulation, flexible blanket-type on wall; 4" of rock wool on ceilings; asphaltic waterproofing. Hot-air heating. Color scheme: exterior, white; interior, varied. Wood sash, double-hung; copper screens. **Cost: $8,000.**

FIRST FLOOR

SECOND FLOOR

Photographs by Jessie Tarbox Beals

HOUSE OF DR. R. H. ALLISON

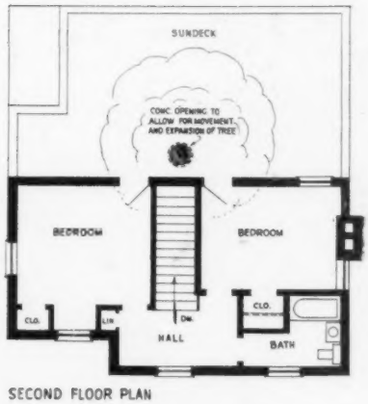
SUMMIT, ILLINOIS

GEORGE LOANE TUCKER

ARCHITECT

CELLAR PLAN

FIRST FLOOR PLAN



SECOND FLOOR PLAN

5746

GEORGE LOANE TUCKER

ARCHITECT

To accommodate a few patients who might visit the doctor at off hours, an office and separate stair were incorporated into the basement plan. There was a beautiful tree on the lot which would have had to be cut down to place the house properly on the lot. The owner was finally persuaded to preserve it. Four-inch tiles were run into the roots of the tree from three sides to give them air and water, and the house so placed that the oak tree ran through a guest clothes closet on the first floor and emerged on the terrace of the second floor. Allowance was made for possible growth and wind movement of the tree by placing flashing around it.

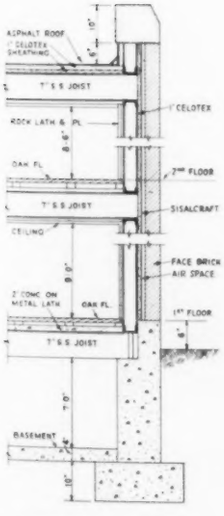
Rooms for one child and a "family-type" maid were placed on the second floor, with the owner's bedroom on the first floor where midnight calls would not disturb the remainder of the household.

Construction is Brick veneer on Stran-Steel with concrete sub-floors and oak finished floors. The exterior is medium face red brick with white trim. **Cost: $10,000.**

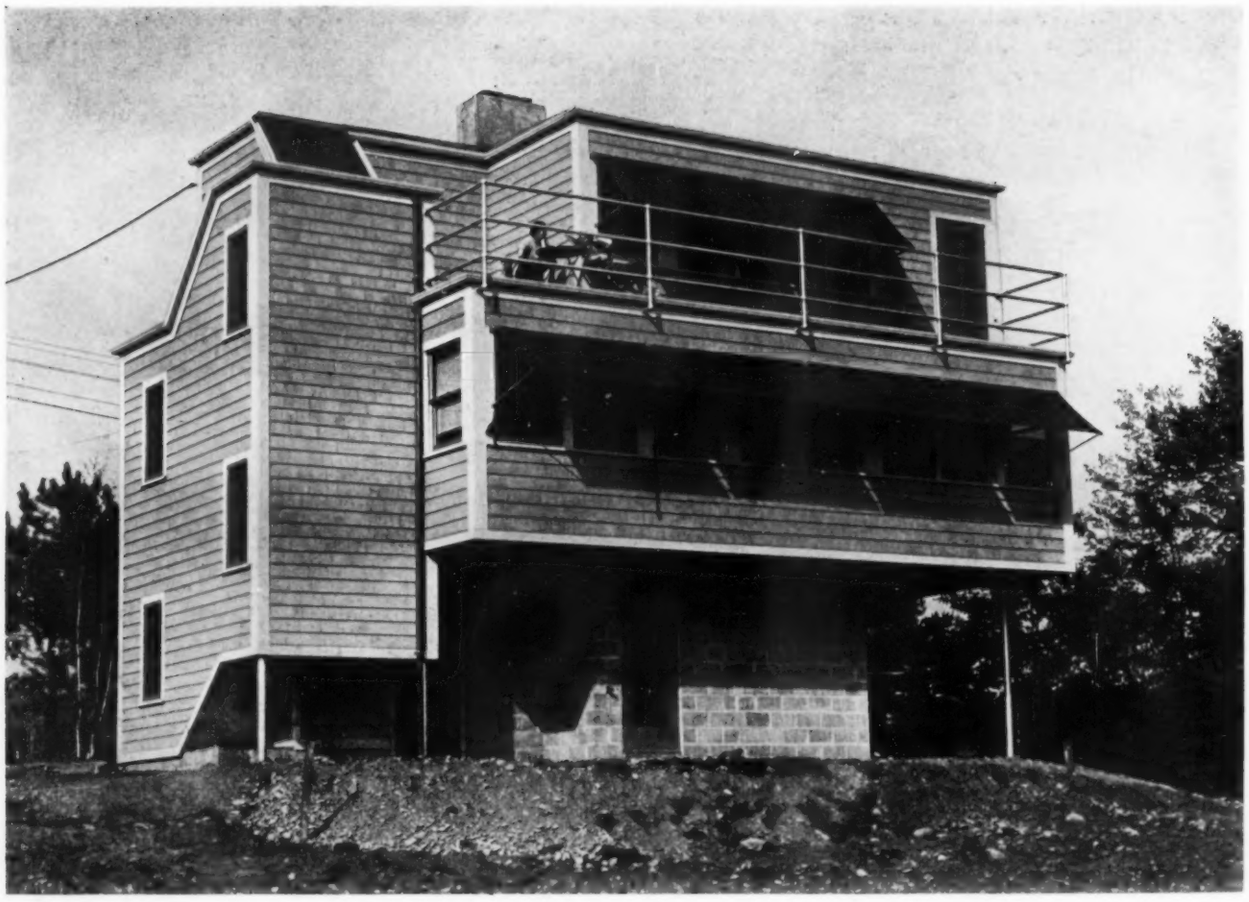
Photographs by Jessie Tarbox Beals

Opposite:
ENTRANCE DETAIL

Right:
LIVING ROOM



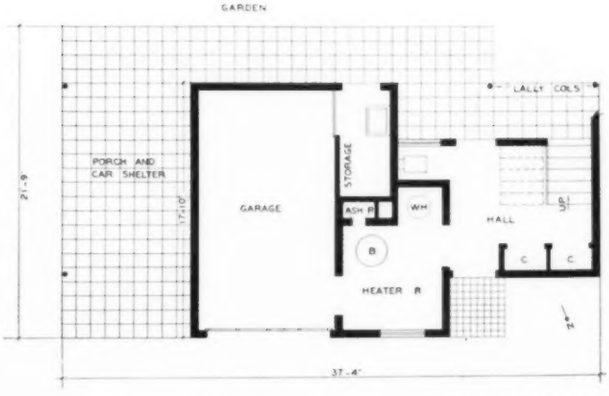
TYPICAL WALL SECTION



RALPH-BARBARIN HOUSE

NEAR STAMFORD

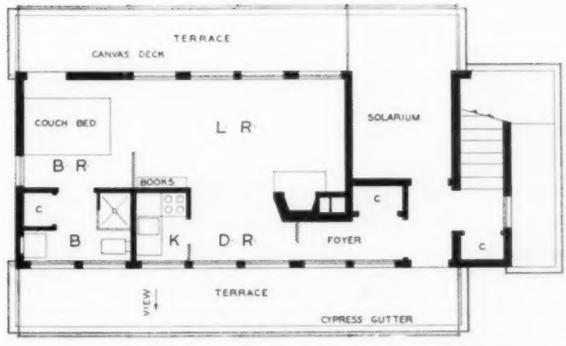
This house is intended for either summer or all-year use. The principal living rooms are on the second floor. The third floor consists of a completely equipped apartment or "penthouse" for guests. Both floors have independent stairway entrances. This is made possible by the location of a stairway tower at one end. The principal windows of the house face toward a large artificial lake and wooded hills and toward a garden in opposite direction. The ground floor has a garage, heater room, laundry-storage, and a porch; this porch can serve as an auxiliary garage. The sheltered second-floor overhang is on the side of house toward garden. The house walls are of concrete block construction for the ground floor. The structure above is of wood frame, insulated with aluminum foil and faced with shingles. Interiors have plywood walls.



GROUND FLOOR

CONNECTICUT DESIGNED BY A. LAWRENCE KOCHER AND ALBERT FREY

FIRST FLOOR



PENTHOUSE

Photograph by Henri H. Davis

HOUSE OF MRS. GEORGE BARR KAYSER
PARK RIDGE, HARRISON, NEW YORK

GEORGE BARR KAYSER
ARCHITECT

FIRST FLOOR PLAN

Concrete and concrete block foundations, wood frame walls, shingle facing, steel frame girders; slate roof. WALL FINISHES: plaster, wallpaper; wood wainscot in dining room; tile in kitchen. Oak floors. INSULATION: 4" rock wool on second floor; Reynolds Metallated Fabric on exterior walls. WATERPROOFING: three coats of hot tar and felt on all exterior cellar walls and over entire cellar floor. Dailaire air conditioning system. Murphy built-in kitchen and pantry cabinets. Russell and Erwin hardware in bronze finish. COLOR SCHEME OF EXTERIOR: light cream; black slate and blinds. INTERIOR: light and medium cream stippled walls; bedrooms, paper; dining room, apple green and light cream. Double-hung wood sash; casement in kitchen; copper screens.

SECOND FLOOR PLAN

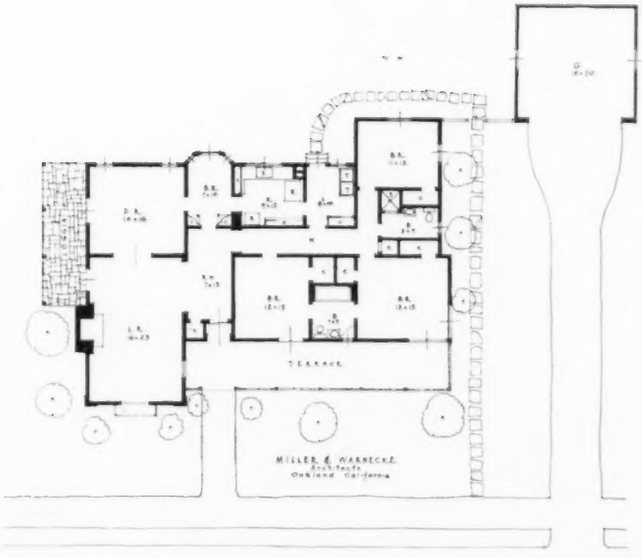
A MODEL HOUSE

OAKLAND, CALIFORNIA

MILLER AND WARNECKE

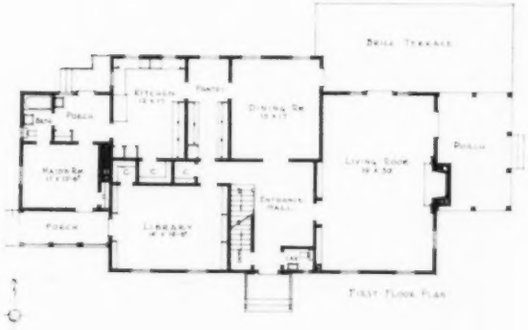
ARCHITECTS

Concrete foundations, wood frame walls, V-jointed rustic (redwood) facing, painted white. ROOF: redwood shakes, 10" to weather; galvanized iron sheet metalwork. FLOORS: oak; tile in baths; linoleum in kitchen and breakfast room. Plaster and wallpaper finishes. Hot air heating. Schlage hardware, brass finish. Sherwin-Williams paints. General Electric wiring. COLOR SCHEME: exterior, white with green shutters; dark roof. Interior: paneled dining room; red wallpapor in living room, brown in halls; woodwork, bono white. Wood sash, both casement and double-hung; copper roll-screens; double strength Lustra glass.

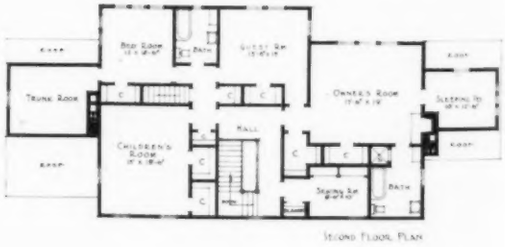


Photographs by Mott Studios

HOUSE OF R. E. STEARNS
SAN MARINO, CALIFORNIA



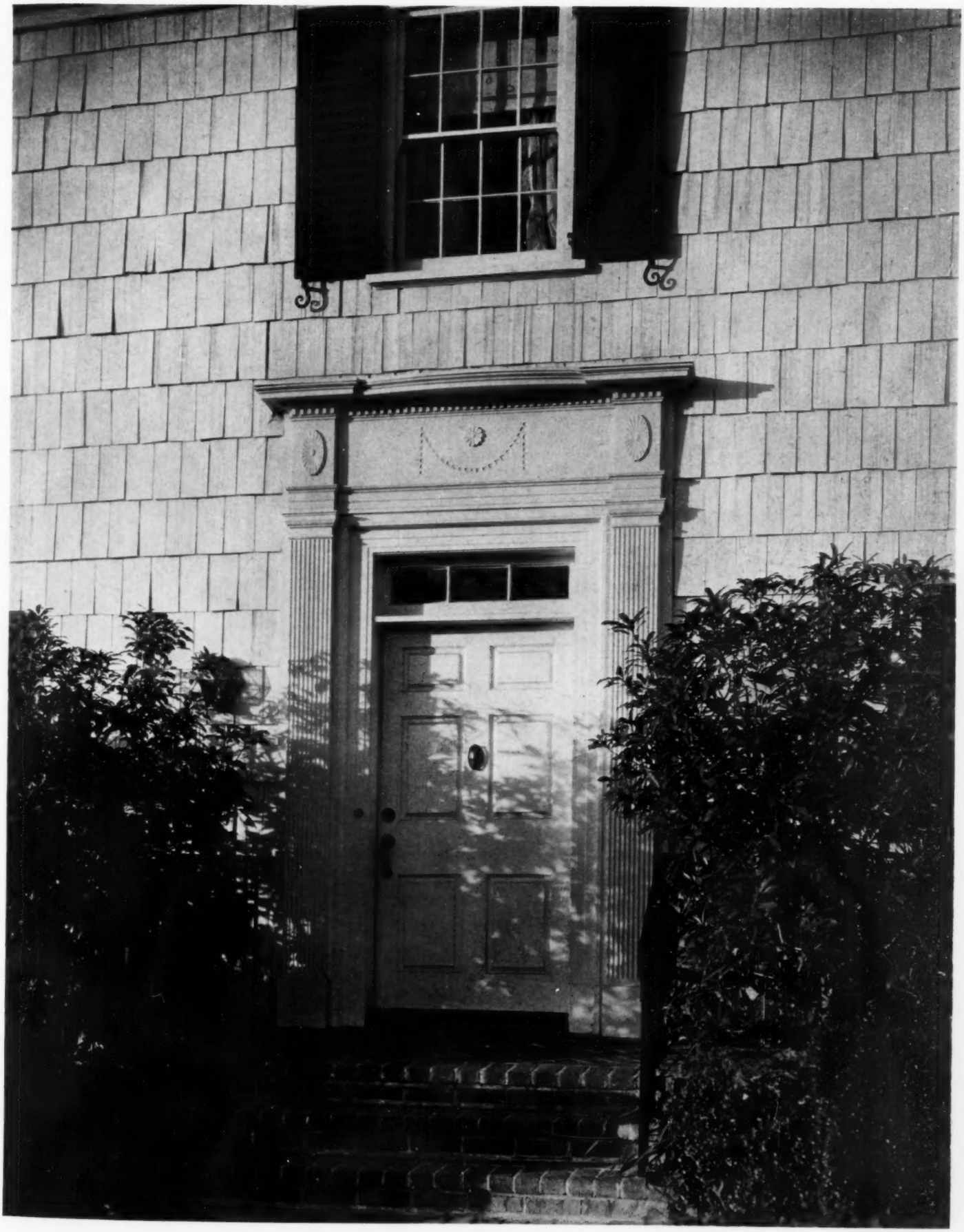
FIRST FLOOR PLAN

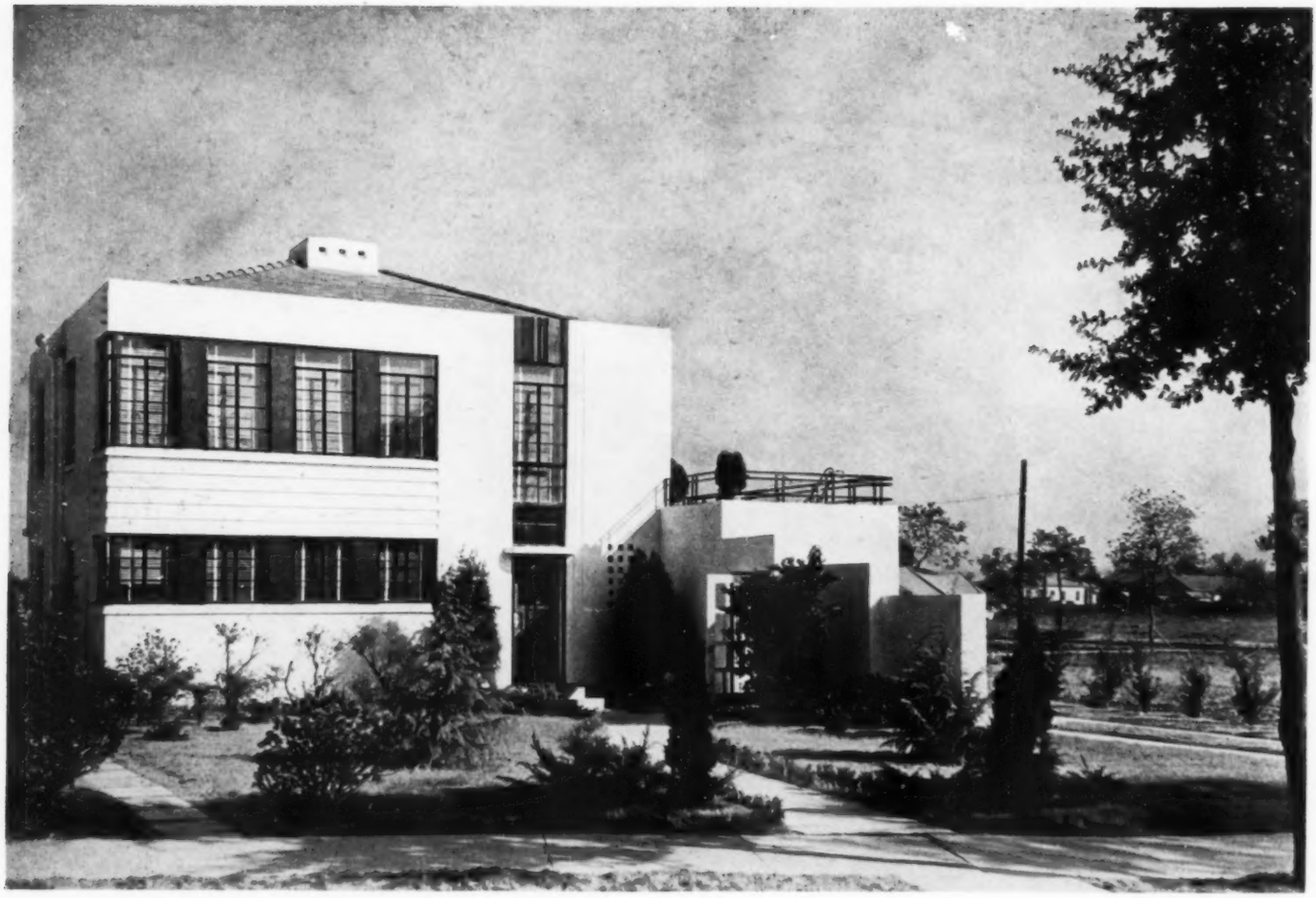


SECOND FLOOR PLAN

HIBBARD, GERITY AND KERTON

ARCHITECTS





THE LONE STAR HOME
NEW ORLEANS, LOUISIANA

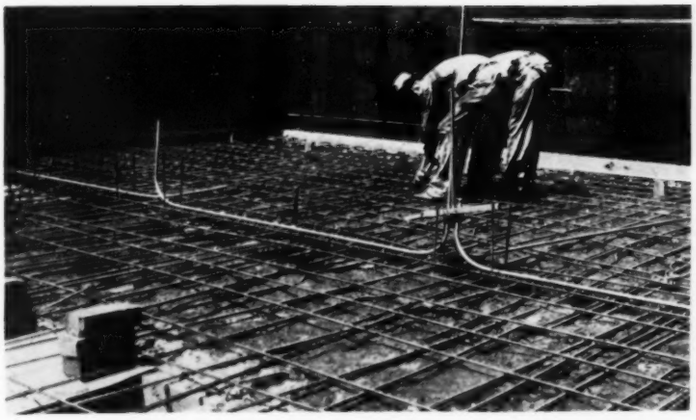
MODEL HOUSE built to demonstrate the possibility of attaining fire-resistive construction and durability at moderate cost.

WEISS, DREYFOUS & SEIFERTH

ARCHITECTS

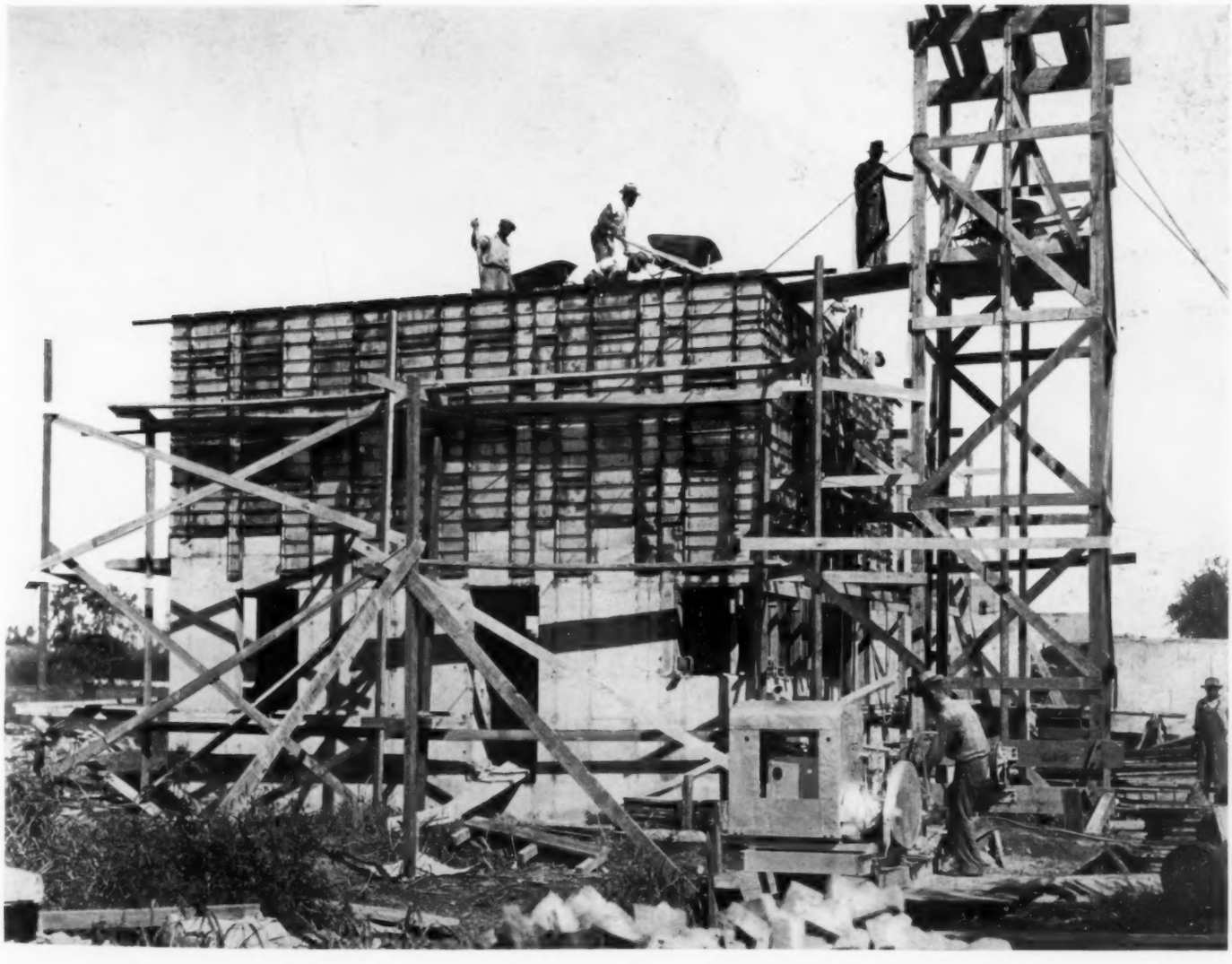
Photographs by Ewing Galloway

FOUNDATION: slab, 10" reinforced concrete, from 3'6" to 7'0" in width under exterior walls; WALLS, 8" reinforced solid concrete designed as beams with two one-inch bars top and bottom; height from top of foundation slab to top of first floor slab is 4'6". FRAME CONSTRUCTION: exterior walls, 8" reinforced concrete ribbed walls, ribs spaced on 12", 18", and 24" centers, 3" slab thickness with ribs 5" deep and 4" wide. Slab reinforced with 3/8" round bars placed 12" c. to c. horizontally with each rib having two 3/8" bars vertically. Wide jambs and mullions have four bars; tie beams four 1/2" round bars; roof parapet, four 5/8" bars. EXTERIOR SURFACE: natural concrete walls with black polished terrazzo in mullions and in parapet over entry motif on front of structure. ROOF: pitched with 4" solid reinforced concrete slab underneath; roof frame consists of 7/8" wood sheathing, 2" x 6" rafters, and 30-lb. roofing felt under J-M No. 35 Variegated Green cement asbestos shingles, rough texture 8" x 16" tapered. Gutters, flashing and downspouts, 16-oz. copper. FLOOR SLABS: first, second and second floor ceiling, 4" reinforced concrete, with first floor slab placed on loose fill. Lone Star Portland Cement used in first floor. Incor 24-hour cement used in second and attic floor slabs for quick form and shore removal. Fenestra steel casements, worm and gear under screen operators. HEATING: gas-fired forced hot air circulation, Payne Series "FAU"; Ducts, 26-gauge galvanized iron; cold air return—concrete under kitchen from entry hall; registers, Uni-Flow, vent pipe Transite.



Photograph by Ewing Galloway

ABOVE: Notice the generous use of heavy steel reinforcing rods in the floor slab. Ribbed concrete walls were reinforced equally well. RIGHT: This photograph shows how the new "flexible" steel forms are fitted to one another. They come in sections and are fitted together by means of screws to the other side sections, thus making it possible to build walls of any thickness required. BELOW: Pouring concrete into flexible steel forms.



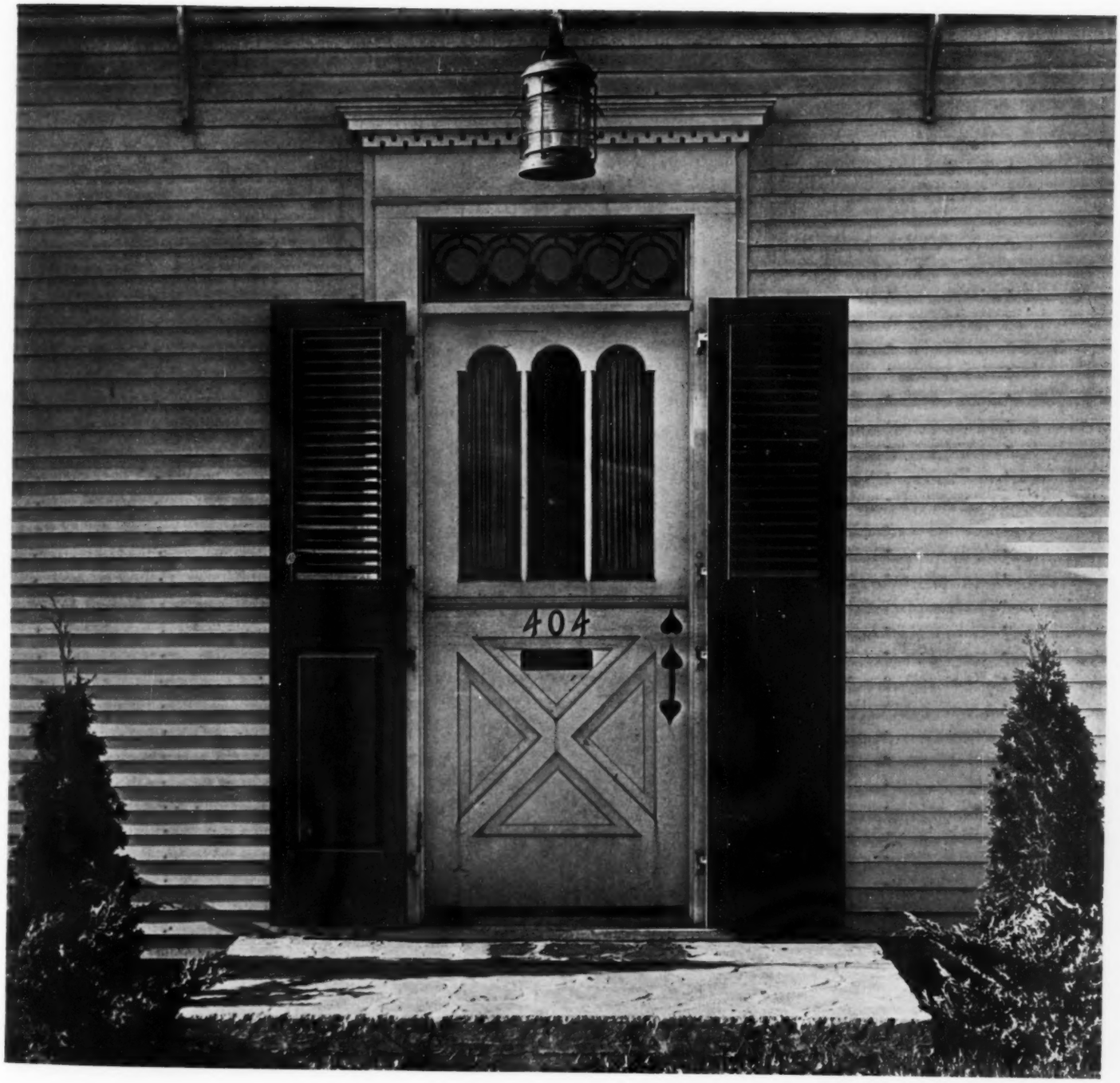
HOUSE OF DR. AND MRS. C. A. STURDEVANT

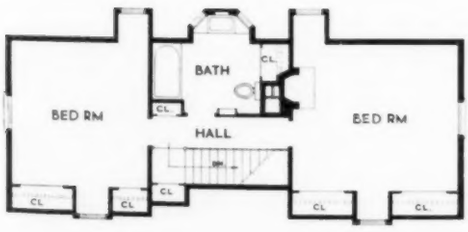
MEADVILLE, PENNSYLVANIA

EDWARD STUART PHILLIPS, ARCHITECT,
of the firm of E. A. & E. S. PHILLIPS, ARCHITECTS

No basement; foundation walls 3 feet deep. First floor slab of concrete with wood floors and sleepers supported on bricks. This space used as return duct. Heater room centrally located on first floor so that maximum length of ducts is 8 feet. Several partitions of vertical pine boards 1" thick. Cinder block foundations, wood frame walls, shingle roof. Walls of plaster. Oak floors. Aluminum foil insulation on roof and walls; asphaltic waterproofing applied to first floor slab. **Heating:** hot-air oil burner. BX wiring. Chase lighting fixtures. McKenny wrought iron hardware. Sherwin-Williams paint throughout. **Color scheme for exterior:** white with green. **Interior:** knotty pine; wallpaper, tinted. Sash are double-hung and of wood; screens, bronze. Libbey-Owens-Ford standard glass. **Cost: $6,700 complete without furnishings.**

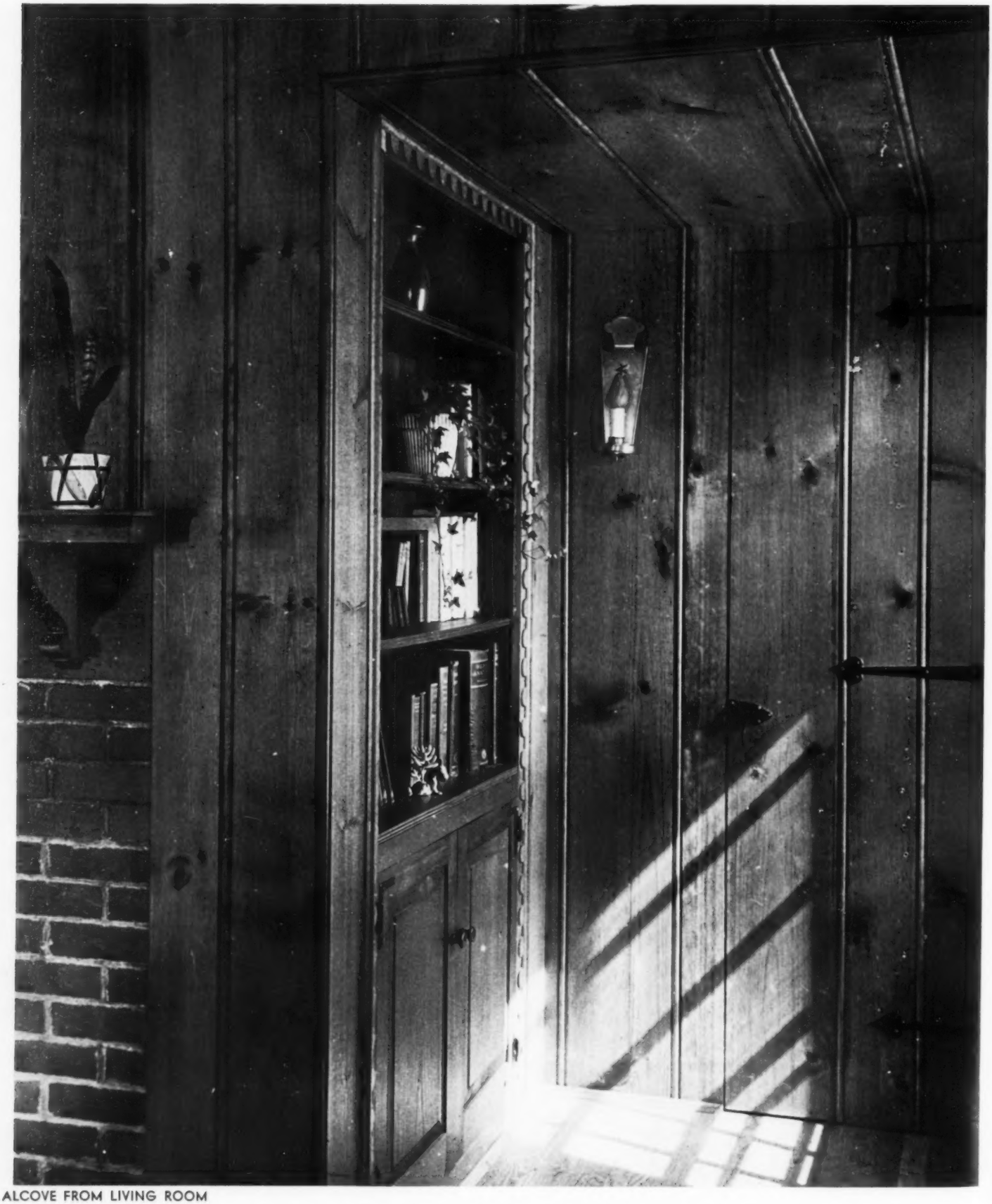
FIRST FLOOR





SECOND FLOOR

ELEVATION



ALCOVE FROM LIVING ROOM

HOUSE OF DR. AND MRS. C. A. STURDEVANT, MEADVILLE, PENNSYLVANIA

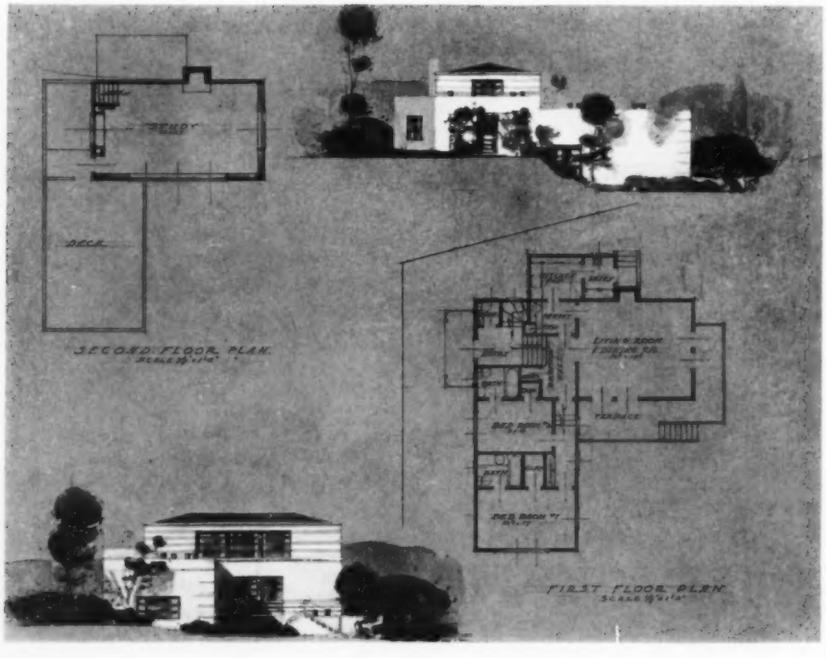
EDWARD STUART PHILLIPS, ARCHITECT

HOUSE OF B. A. G. FULLER **HOLLYWOOD, CALIFORNIA**

RALPH C. FLEWELLING
ARCHITECT

Concrete foundations; "V" channel D. F. siding and exterior plaster; air-dried red cedar shingle roof. **Wall finishes:** plaster, plywood and wallpaper; structural glass wainscot in baths. Oak **floors;** rubber tile in entry and study; linoleum in baths. 15 lb. W. P. asphalt saturated felt paper in 12" strips under each course of shingles. Brush coat on exterior plaster. Waterproof membrane over concrete floor slabs that are below grade. Hot-air heating. **Built-in features:** dumb-waiter, bookcases, ironing board, cabinets, wardrobes. Corbin hard-ware in antique Colonial brass. Steel **casement sash;** copper screens. Double-strength Pennvernon **glass.** Exterior painted cream. **Cost: house, $9,500; landscaping, $1,200.**

TERRACE AND OUTSIDE STAIRWAY



RALPH C. FLEWELLING
ARCHITECT

LIVING ROOM

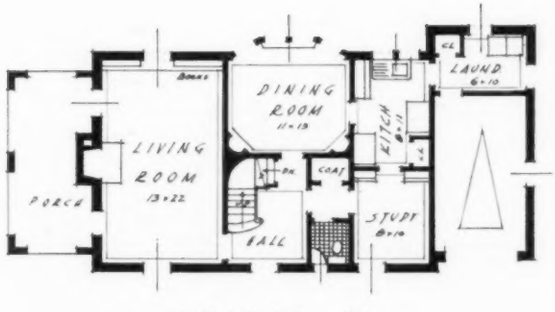
HOUSE OF B. A. G. FULLER **HOLLYWOOD, CALIFORNIA**

The study, shown on plan reproduced on opposite page, is at the top floor level. This was done for quiet. The interior room shape conforms to the shape of roof. New type materials were used for walls and ceiling. Floors are of rubber tile.

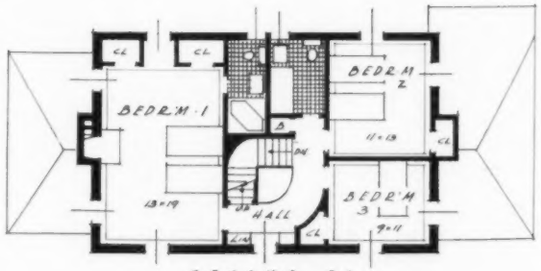
Photographs by Murray M. Peters

HOUSE OF MR. AND MRS. WM. J. NAVIN
PORT WASHINGTON, NEW YORK

THEODORE WHITEHEAD DAVIS
ARCHITECT



FIRST FL.



SECOND FL.

Foundation: 12″ concrete blocks. Wood frame construction with brick veneer outside. Roof is shingle, stained dark brown. Inside walls are papered except kitchen and rear entry which are painted. Oak floors; linoleum in kitchen and rear entry; tile bathrooms. Second floor ceiling insulated with blanket-type insulation. Heating plant is vacuum converted from steam system; first floor radiators are concealed. Equipped with copper bronze screens, storm sash on rear (north), copper gutters and leaders. Exterior whitewashed with permanent whitewash. **Cost: $10,000.**

Photographs by Donald H. Ross

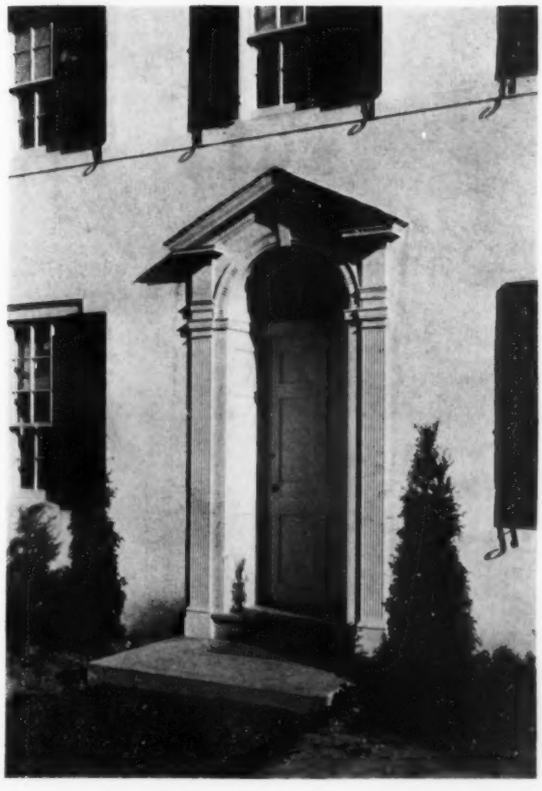
HOUSE OF DR. AND MRS. PHILIP L. HARRIMAN
LEWISBURG, PENNSYLVANIA

FIRST FLOOR

SECOND FLOOR

M. A. CLINGER, ARCHITECT

Concrete block foundations and walls, slate roof. One inch furring applied directly to blocks on inside. Rocklath and plaster used for interior. **Wall finishes:** exterior, cement plaster; interior, gypsum plaster. Floors of random width knotty pine. Hot-water heating. Work shelf with drawers and cupboards below and cupboards above built around entire kitchen; sink built into work shelf. Corbin hardware in polished brass. Romex wiring. Sherwin-Williams and du Pont paint used throughout. **Color scheme of exterior:** whitewash on plaster, with dark green shutters. **Interior:** ivory trim, ivory plaster and natural floors. Double-hung sash of wood; copper screens. **Cost: house, $7,000; landscaping, $200.**



SOUTHEAST ELEVATION FROM RIVER

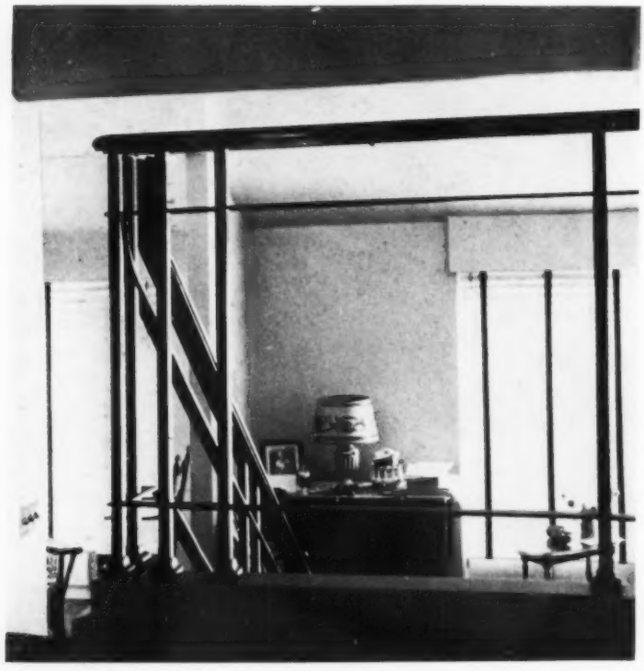
HOUSE OF E. L. WILDE

WATERTOWN, WISCONSIN

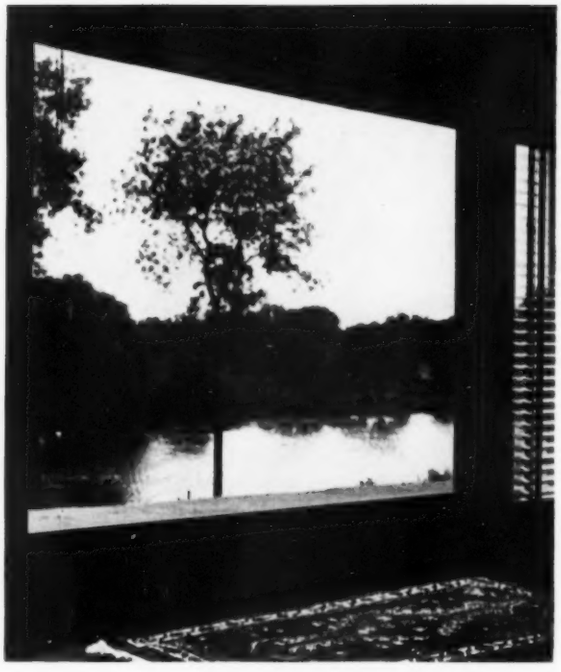
GEORGE FRED KECK
ARCHITECT

VIEW FROM SOUTHWEST

LIVING ROOM



STAIR RAIL DETAIL



THERMOPANE PLATE GLASS
WINDOW IN LIVING ROOM

STAIR RAIL DETAIL

HOUSE OF E. L. WILDE
WATERTOWN, WISCONSIN

GEORGE FRED KECK
ARCHITECT

Concrete foundations, brick veneer walls, creosoted wood shingle roof. **Wall finishes:** hard finished plaster; tile in bathrooms; all plaster painted with enamel throughout house. **Floors:** oak, linoleum; tile in bathrooms. One-inch insulation board used as a plaster base; mulsified asphaltic waterproofing. Delco oil-burning heating system. Corbin brushed nickel hardware; lighting fixtures, stock to match hardware. Pratt and Lambert paint throughout. **Exterior color scheme:** common brick in cream with traces of orange; wood and shingles painted a deep brown; sash, deep green. **Interior:** living room, dining room and hallway, blue; kitchen, yellow with red; bedrooms, peach; baths, blue tile; all wood floors are stained a light brown. Wood casement sash, 1¾" thick for Thermopane. Thermopane glass, plate ⅛" thick with ¼" air space, in living and dining rooms. **Cost: $9,000.**

DINING ROOM

Photographs by Jessie Tarbox Beals

HOUSE OF CHARLES DOETSCHMAN **AURORA, ILLINOIS**

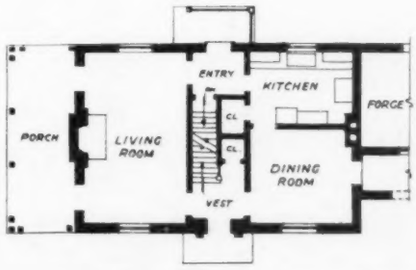
GEORGE LOANE TUCKER
ARCHITECT

Photograph by Gottscho

GROOM'S HOUSE FOR RICHARD V. N. GAMBRILL **PEAPACK, NEW JERSEY**

SECOND FLOOR PLAN

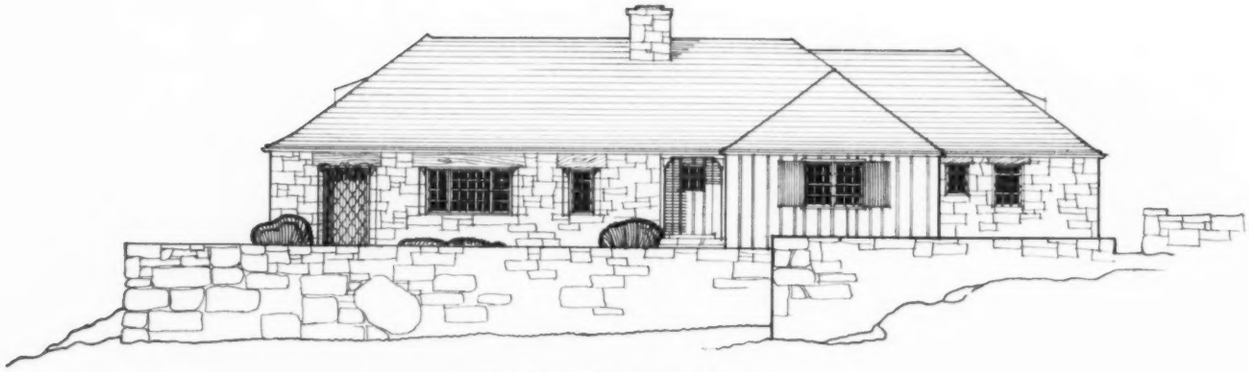
JAMES C. MACKENZIE, ARCHITECT



FIRST FLOOR PLAN

WEEK-END HOUSE FOR C. D. DALLAS — KATONAH, NEW YORK

As a first step in the gradual development of his 50-acre tract, the owner decided to build a week-end house so planned that it would serve as a three-car garage and servants' quarters in the ultimate development of the property. The site selected was on a natural terrace formed by the foundations of an old barn located near the road. The high terrace wall forms a background for a small flower garden at the lower level.

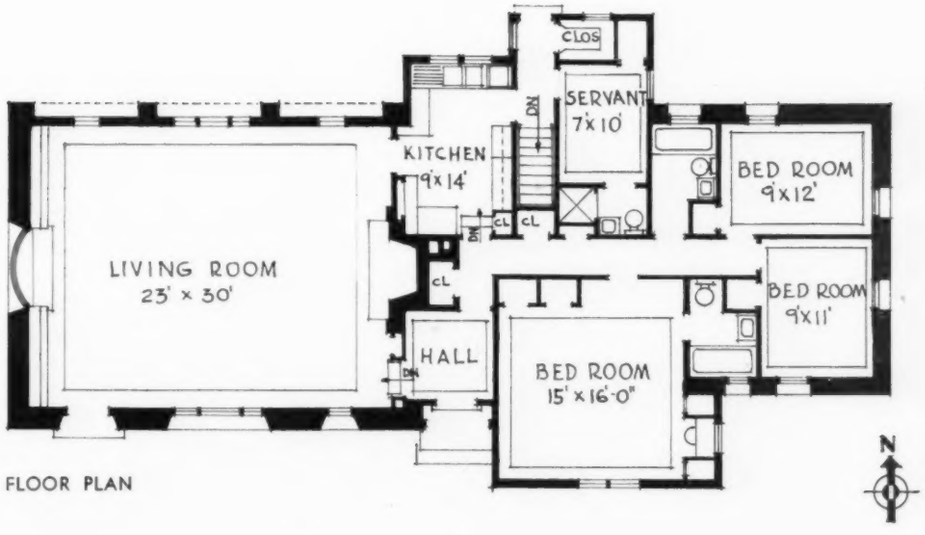


SOUTH ELEVATION

Photographs by George Van Anda

WILLIS N. MILLS, ARCHITECT

The exterior is of local stone and molded redwood boards stained a warm gray; roof of rigid asbestos shingles. Leaders and gutters are lead-covered copper. Shutters and doors are painted blue.



FLOOR PLAN

Photographs by George Van Anda

WEEK-END HOUSE FOR C. D. DALLAS **KATONAH, NEW YORK**

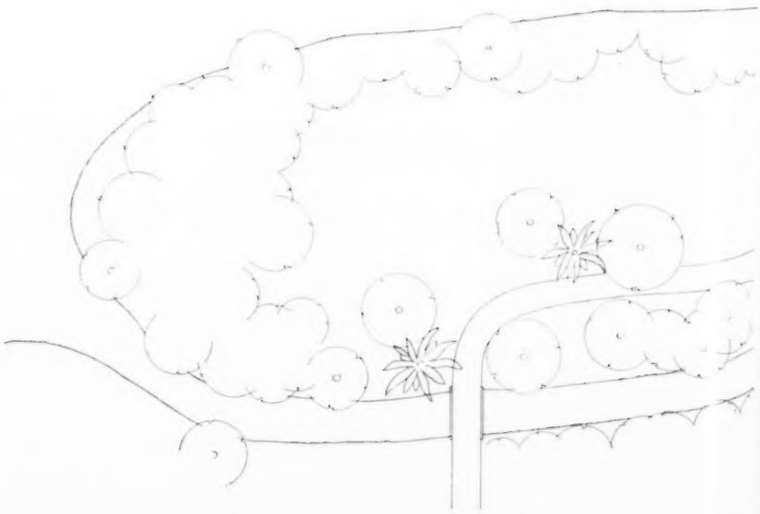
WILLIS N. MILLS, ARCHITECT

The living room is sheathed in pine. The ceiling is sand-finished plaster with structural beams exposed. A temporary wood floor of broad pine boards covers the concrete below. An extended view to the west is framed by a large bow window set between removable bookcases which extend the full width of the room. Bedrooms have painted floors, and papered walls in gay colors with interior woodwork painted flat white. Hardware and interior lighting fixtures were handmade by local craftsmen. A small basement includes storage space and furnace room. **Heating system:** steam, with H. B. Smith boiler and American Radiator Company radiators. **Plumbing:** sewage disposal, septic tank and the tile disposal field; hot and cold-water pipes, copper tubing (circulating hot-water system for domestic hot water); Standard Sanitary fixtures.

VACATION COTTAGE FOR MR. AND MRS. R. H. DEARBORN

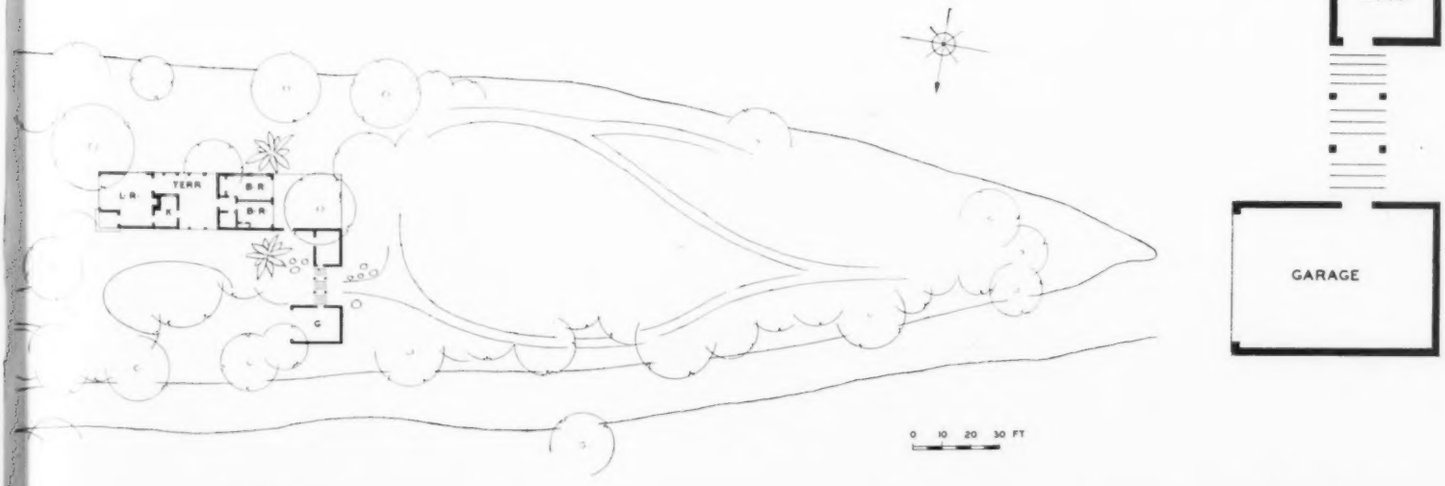
McKENZIE RIVER, OREGON

Concrete foundations, wood frame walls, facing of shakes cut on site, shingle roof. Porch, used for outdoor dining and living, was designed to frame view to river and creek from south and north sides of the house. The trees determined the location of house. Garage was an existing feature of property when house was built. Lumber was purchased from a small sawmill near site. In this wooded mountainous region wood was considered the logical material for economical construction. Bedrooms were designed as a separate unit to secure quiet and privacy. All interior walls and ceilings, 1" x 8" pine, natural finish. Fir wood floors, cement surface on porch. Heating: fireplace in living room, small stove for bedroom unit. **Exterior color scheme:** Cabot's light gray shingle stain on walls; roof not stained. **Interior:** all wood, natural finish. Wood casement sash; copper screens. Practically no planting was required. The site had rhododendrons, flowering dogwoods and other native plant materials. **Cost: approximately $1,800.**



DESIGNED BY

SHELDON BRUMBAUGH



PLOT PLAN

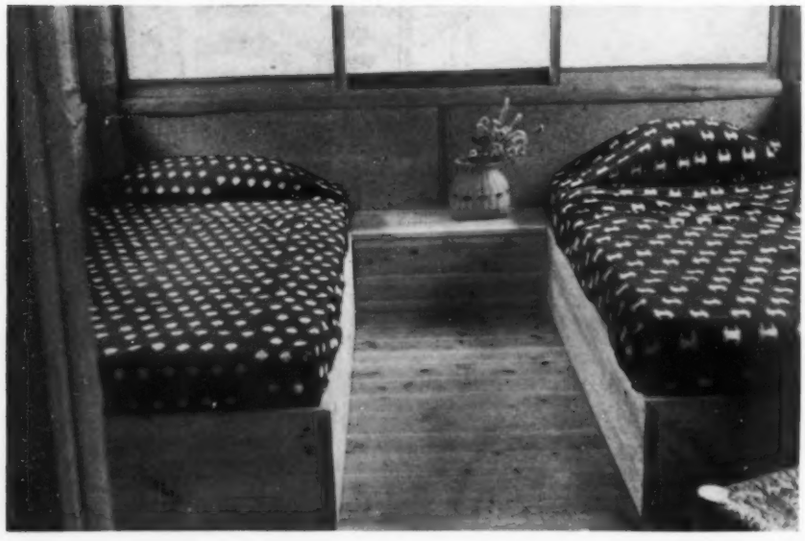
WEEK-END HOUSE INTERIORS

BY ANTONIN RAYMOND
ARCHITECT

MISS WALKER'S COTTAGE
KARUIZAWA, JAPAN

Bedrooms, separated by sliding partition; can be used as one or two rooms; exterior windows are sliding type; beds are spring mattresses mounted on boxes and have inner-spring mattresses; woodwork is of natural finish cedar.

Living Room. Fireplace is of lava concrete from site, with unrubbed and natural surface. Settee consists of frame made from peeled saplings, rope spring and mattress. A part of wall opens to a woodland setting.



Small bedroom with built-in bunks of box construction and otherwise similar to other bedrooms. Partition units consist of wood frames surfaced with handmade paper. All woodwork is of cedar.

Photograph by Zimmerman

ARTHUR EDWARD ALLEN is a specialist who works and talks in terms of quantity production of small house design. Some 15,000 houses, representing the largest home building enterprises on Long Island, have been built from his plans. At the present time he is working on thirty-five different projects, all within a price range of from $4,200 to $15,000, which he calculates will mature into a total of more than 3,100 houses by the end of the year. One of these projects is Bayside Hills, which the Gross-Morton Corporation is developing on the old Belleclaire Golf Course on Long Island, under the mortgage insurance standards established by the Federal Housing Administration; the project comprises 1,000 houses retailing at $4,940.

Slim, youthful—he is only 35—and as realistic as any of the operative builders with whom he deals, Allen has had an unconventional career as an architect. After a brief wartime service with the marines, whom he left a Brooklyn high school to join, he got a job as a time-keeper with a general contractor in Manhattan. Then followed some experience as a carpenter, a course in architecture at Pratt Institute and two years as a construction engineer inspecting 20 to 30 plans a day in the municipal building department before he hung out his architect's shingle. Since then he has been working closely with such real estate developers as Stewart Willey, the Gross brothers, W. R. Gibson, Wolosoff brothers, Frank Droesch, Lawrence Morton, and others. The Spanish style of house seen in such big developments as Merrick Gables on the south shore can be traced back to Allen's drafting table. In his business office at Jamaica, Long Island, where commissions are now coming in for projects as far away as Chicago, he has two draftsmen working full time and a third part time to assist him in turning out the working details. He personally evolves all his own plans and designs and prepares his own presentation renderings down to the last brushful of color. Allen likes the small house, primarily because its requirements are so specialized. He has never designed a skyscraper nor does he so desire; moreover, he thinks the skyscraper architect would have just as much trouble in designing a satisfactory small house as he would have in creating a complicated office building.

Not much exploration has been made of the small house field by the architectural profession in the past, but any one who is interested in knowing how one designer is pioneering will find some practical advice in the accompanying account of an interview granted one of the editors of The Architectural Record.

". . . find out what the buyer wants"

AN INTERVIEW WITH THE ARCHITECT OF ONE OF THE LARGEST FHA-INSURED HOUSING DEVELOPMENTS

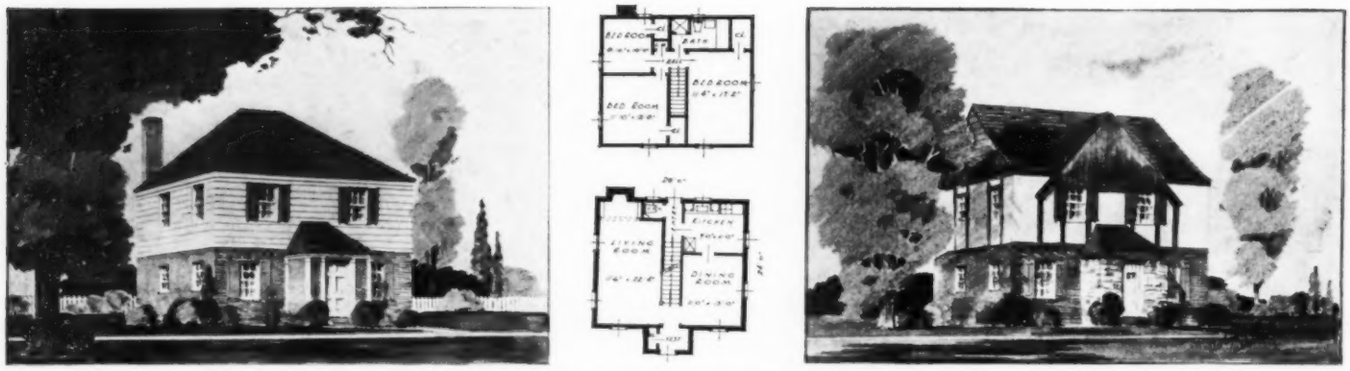
Do you see an extensive field for architectural services, Mr. Allen?

Yes, if the architect will convince himself that a house under $5,000 is worth bothering with. It's a highly competitive market, and any architect interested in this field must specialize. The lower the cost of the house, the more specialized becomes the work—more careful layouts and more efficient use of materials are necessary.

Whose interest does the designer have to consider primarily—the home owner or the builder?

Both. The architect can be of service to the buyer by suggesting to the builder what type of house arrangement, facilities and so on are desired or needed by prospective customers. What the buyer wants is an important consideration when the builder has to sell his product in competition. By providing as many quality features as possible at a given price level the architect helps the builder to sell the houses. Much better houses are being sold today for this very reason. A house selling at $4,990, which is a typical market price at present, is superior to the $6,990 house of seven years ago.

Another way in which the architect can help the builder in selling houses is by preparing sketches and renderings. A home buyer can see the floor arrangement easily enough in the model house which is usually erected early in the development for this purpose, but if he desires a different exterior treatment a colorful perspective drawing will help him visualize the final product. For example, at Bayside Hills this winter, in spite of 22 days of unusually severe weather, the builders were able to sell 34 houses from renderings on display in one of the model homes.



MANY VARYING EXTERIORS ARE DESIGNED FROM EACH BASIC FLOOR PLAN, USUALLY DEMONSTRATED AS A MODEL HOUSE

How do you find out what is wanted in the house design?

By interviewing people and by sending out questionnaires. Whenever a new model house is opened to the public I always wander about talking with visitors to get their reactions. So long as they don't know I am the architect they usually speak quite frankly. I also send out questionnaires to persons who have bought houses previously asking them what they would want if they were going to buy again. In this way I get a good check on changes in consumer demand. Incidentally, the buying public changes its mind very easily, so it is necessary to keep posted on market needs all the time.

Do you try out new ideas?

Not unless we are reasonably sure they will go over. I am planning to send out a new questionnaire asking whether the owners would prefer a house without a cellar if they could have another room above ground for the same amount of money. . . . If I find that they ever want a cellar on the roof, I'll give it to them.

Do you try to condition the public to want any special features?

No. Our efforts are directed entirely toward finding out what the public wants.

What features do you find buyers want at the present time?

Most important is a bathroom that's "Klassy" with a capital K. Then come the kitchen, the living room and a finished room in the basement, in order of importance. Fireplaces don't seem necessary—out of a hundred houses in Bayside Hills possibly 10 or 15 have fireplaces, for which the buyer had to pay extra.

What sort of equipment sells well?

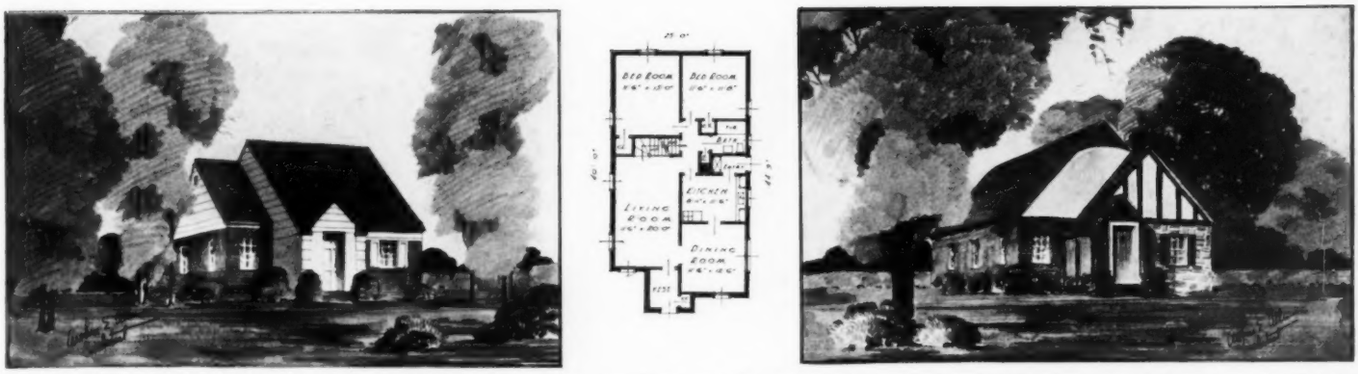
In the bathroom tile and colored fixtures, also plenty of mirrors. For some reason or other, possibly because the room looks larger, women like to have a mirror right over the tub. . . . The kitchen has to be colorful and must have plenty of cabinets. Also a linoleum floor and—this is a very important point—well-known, nationally advertised products. As soon as the visitors recognize a stove or kitchen cabinet as something they have seen in advertisements they feel they are getting quality goods. . . . Oak floors go very well in the living room. At present there is a preference for paint instead of paper on the walls, although a shift from paint to paper seems to be under way.

Do buyers ask for any special structural features?

At the present time they prefer brick and stucco. They put considerable emphasis on maintenance—this is a big sales feature. The modernistic house exhibits draw big crowds, but so far as I can discover buyers do not like flat roofs and plain walls—they still prefer the "Home Sweet Home" type. Besides, in many communities there are restrictions against flat roofs.

What is the usual procedure in developing a project?

At Bayside Hills, for instance, the builders told me about the property and asked me to look at it. Together we figured out the type of house to be built, the layout of streets and sewers and the general grouping of houses. In this pre-



PRESENTATION DRAWINGS ARE PREPARED SO THAT BUYERS CAN VISUALIZE THE DIFFERENT EXTERIOR TREATMENTS

liminary subdivision work I acted as a consultant. To get an idea of the development plan as a whole, a number of block models were made to scale. After that came the job of designing the plan types.

A fixed sales price had been decided on—6-room house or 5-room bungalow coming under $5,000. This allotted figure had to be broken down into cost of utilities like roads and sewers, cost of financing, sales overhead, and builders' profit. What was left could be used for building the individual house, and at this point the task of providing as much as possible in order to undersell competitors begins.

Suppose we have $3,200 left after the preliminary expenses are deducted, and we know from past experience that similar houses cost 16 cents a cubic foot, we immediately see that we have 20,000 cubes at our disposal in planning the house. As soon as a plan is in shape it is checked against outside bids—if a general contractor doesn't furnish an estimate I call in different subcontractors and arrive at my own figure. If it is discovered that the bid runs 10%, let's say, above the budgeted figure, then the house space has to be reduced 10%. Nothing is sacrificed in the quality of the materials—only the quantities are cut down. The room dimensions are governed largely by the economic sizes of materials, which is a requirement that makes small house design so specialized a line of work—it is necessary to know how not to waste any lumber or other materials.

The basic plan is demonstrated in the model house. Once this is erected orders can be taken for similar arrangements using different elevations if desired. In Bayside Hills, for example, an assortment of 37 different elevations, based on 4 different floor plans, is offered the buyer. The prospective home owner picks out whatever plan and elevation he prefers —that is why it is so important to have good presentation drawings to help him visualize what he can't see on the location.

Do you write the specifications?

The specifications are controlled entirely by prices. For example, if wire lath is selling at 20 cents and we shop around and find wire lath at 18 cents, we would use wire lath at 18 cents. Consequently the specifications have to be very open —just wire lath but no particular product would be specified, and the builder or owner is then free to write into the contract whatever product he selects.

On what basis are the architectural services paid for?

There is a fee for the original plan and a fee for each elevation, plus a royalty for every house built. If supervision is wanted, that's a separate charge. Likewise in consultation work there is a separate fee, depending largely on the size of the project.

Looking ahead, Mr. Allen, what major changes do you see occurring in this field of practice?

If you mean, do I fear the intrusion of the prefabricated house, I can say definitely, no. If you want to know, do I think that the architect will play a more important part in the small house field, my answer is decidedly, yes. The architect, if he is qualified, eliminates a great deal of the guess work inevitable when the builder is left alone in his decisions as to layout and exterior details.

MAJOR BUYING FACTORS IN THE SUBDIVISION HOUSE

A group of important operative builders were asked by THE ARCHITECTURAL RECORD to report what features they found most effective in the sale of houses. The replies, although varying in detail, expressed common agreement on the desirability of (1) quality materials, equipment and workmanship, and (2) spaciousness and efficiency of planning.

In the bathroom:

Decorative, easily cleaned and waterproofed wall finishes appear most important: tile floors and walls take first place in popularity, with structural glass and Vitrolite receiving frequent mention. Modern equipment and accessories are equally desirable—built-in tubs, shower stalls, chromium finishes, colored fixtures, mirrors, built-in vanities, medicine cabinets, and linen closets.

In the kitchen:

Here also, tile walls or wainscots or other permanent wall treatments are popular; likewise tile drain boards. Specialties like double sinks, mechanical refrigeration, modern ranges, exhaust fans and counter lighting are good selling points. Much emphasis is given to compactness and completeness of working space—ample storage, built-in cabinets, combination cabinet and sink, breakfast nooks, pantry, and space for table and chairs. Linoleum is mentioned occasionally as desirable flooring.

In the living room:

General arrangement for furniture, satisfactory orientation and fenestration for light and outside views and spaciousness are most important. Other popular features are wood-burning fireplaces, sufficient wall plugs, good electrical fixtures, built-in bookshelves, beamed ceilings. Plain walls and soft color schemes are mentioned as desirable.

Structural features:

Insulation and fireproofing are generally asked for by buyers. Other items are waterproofed basements and foundations, double flooring, steel beams, asbestos and slate roofs, attached garages.

Amortization:

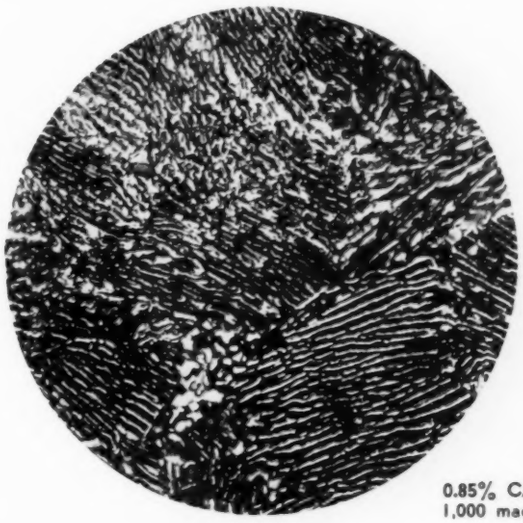
The importance of monthly amortization as a selling point was emphasized by almost all builders, but a marked division of opinion appears in their appraisals of the importance of the FHA standards for mortgage insurance as a buying factor.

ALSO SEE "SELLING POINTS," PAGE 40, ADVERTISING SECTION

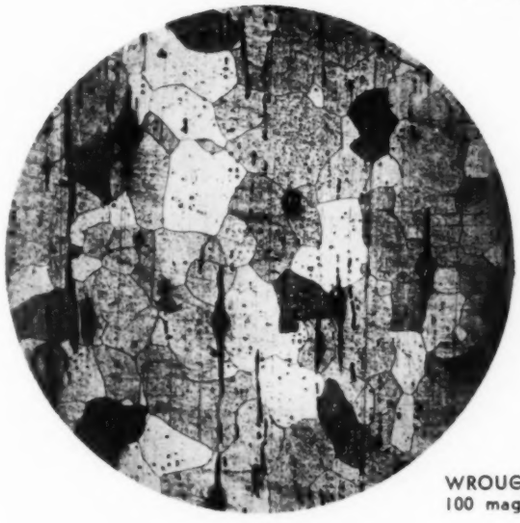
TECHNICAL NEWS AND RESEARCH

Characteristics of metals are changed by altering their crystalline structure. Modern foundry practice and alloying make possible the production of metals designed for specific needs. (Bausch & Lomb photomicrographs)

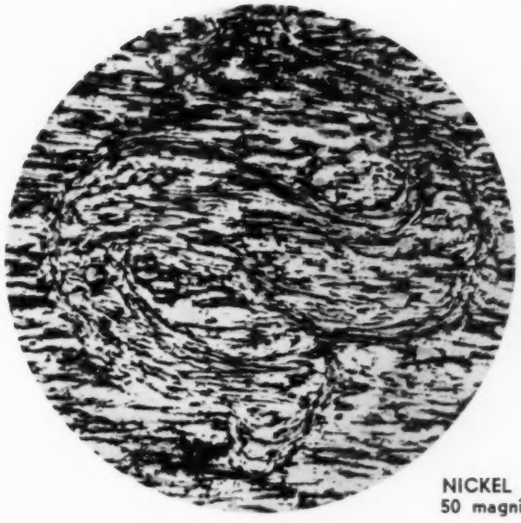
MUNTZ METAL (BRASS)
300 magnification



0.85% CARBON STEEL
1,000 magnification

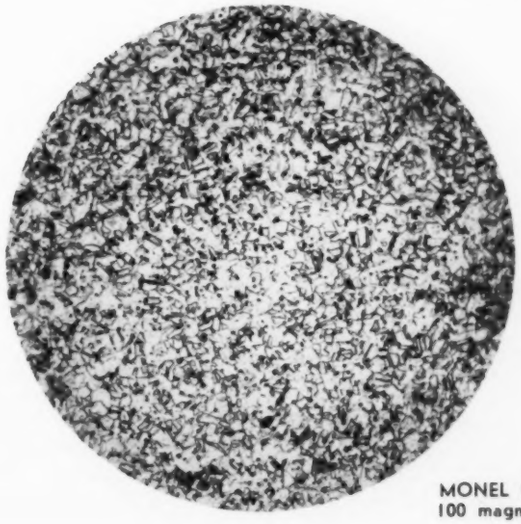


WROUGHT IRON
100 magnification



NICKEL
50 magnification

ANNEALED COPPER
300 magnification



MONEL METAL
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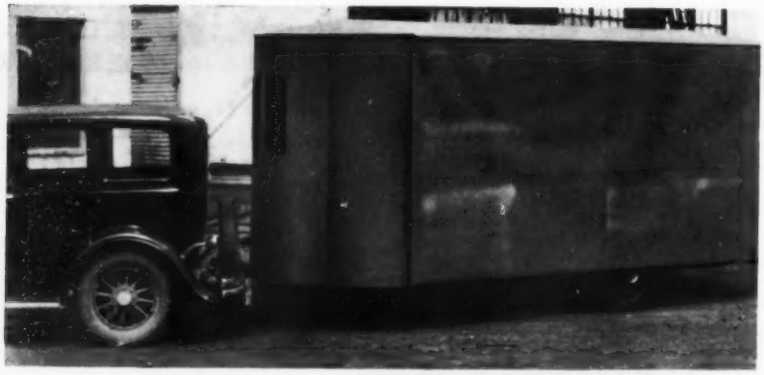
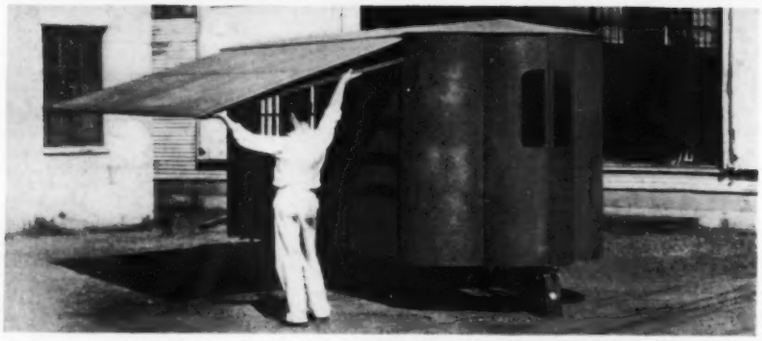
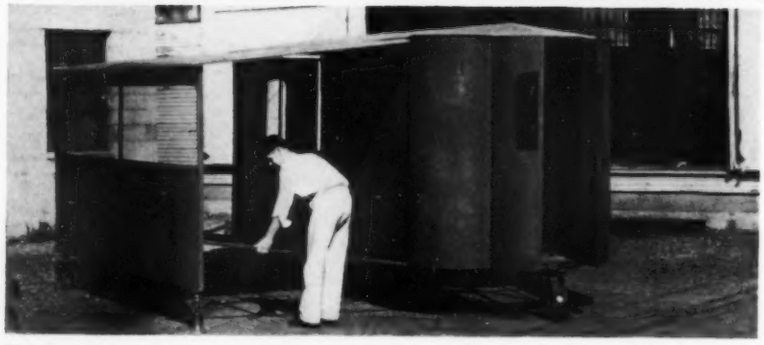
STRUCTURAL MOBILITY



trailer sides

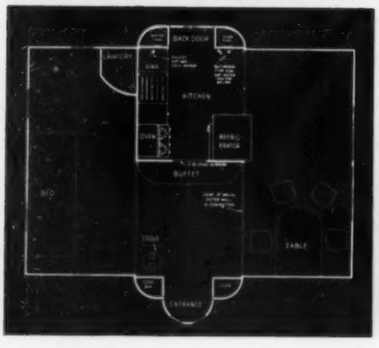


unbolt and



unfold into

room units



mobile houses

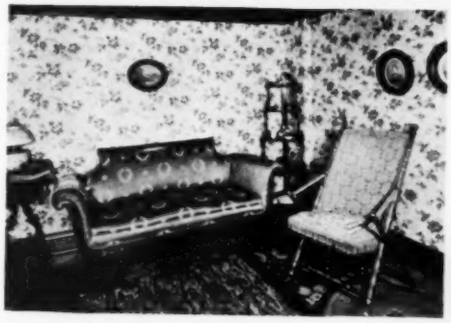
Designed by William B. Stout, president, Stout Engineering Laboratories, Inc., Dearborn, Mich. Production begins in May. Price range: $1,200 *to* $2,500.

This design is primarily a home and only incidentally a trailer which may be moved from place to place at will. Passengers do not ride in the house while on the road, for it is full of furniture, equipment, clothing, food and bedding. Once arrived at a destination, the 16′ x 6′6″ trailer unit unfolds into a 20′ x 14′ living space within a half hour. After the house is extended it can be divided into two twin bedrooms and a living room. It has its own fully-equipped kitchen. The total structure weighs less than 3,000 pounds.

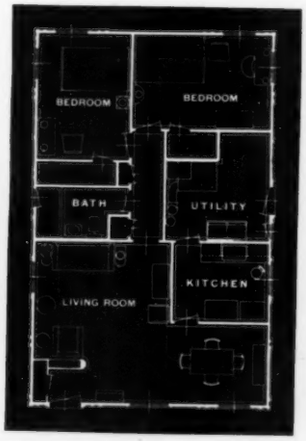
Construction: The outside walls are lightweight alloy metal screwed to a steel tubular frame welded into one-piece units. Interior finish is plywood, also screwed into position. The intervening air space is partly filled with Sepak sheets for insulation. Windows are sliding glass with brass wire screens. The center section, which contains the kitchen and entrance halls, is framed in steel tubing; hinged on each side are the folding wall assemblies.

Equipment: The house is furnished for living—Electrolux refrigerator; 4-burner gas stove; hot and cold water tanks with automatic water heater; Philgas tank equipment, with closets, pantry, buffet, bar, dining table, all a part of the unit design. Six chairs and four wide single beds are included. A small coal stove furnishes heat in the winter. Two lighting systems are offered—one of 110-volt capacity with a 150-foot cable for connection with any system wherever the house may be located, the other of 12 volts with a special generator on the automobile. . . . Equipment varies in detail in each house model, as desired.

Trailer cities: According to Mr. Stout, well known as an automobile and aircraft designer—"In housing is the next great opportunity of industry for the creation of wealth; of new romance of industry and merchandising; and here will come the greatest advances scientifically that the world has ever seen and an industry whose progress will dwarf that of the automobile business within the next twenty years. . . . Starting with the tourist traveling hither and yon, stopping at various tourist camps and waterways—eventually these seem to take root, and in many places trailer cities are semi-permanent as to a large number of trailers. Before long when these can be heated and air conditioned, and made to be all-year-round places of living we will see more permanent dwellings of greater roominess and handiness, lighter and more complete construction, automatic in their accomplishments of the labor of living. This movement is already under way even in present houses. New vehicles will contain their own complete lighting systems and air conditioning pumps, and refrigeration for the hottest days, while this and that will fold out and add on in a way to give extra rooms, lounging space, porches. One trailer city in Florida last year had over 1,000 trailers in its little community, and will probably have over 1,500 this season."



transport trucks carry educational exhibits contrasting old and new living standards



factory-built house designs — with or without flat roofs, with or without basements

world's fair on wheels

General Motors "Parade of Progress," now in Florida on a 20,000 mile tour.

Eight huge transport trucks carry the exhibits and form part of the exposition. One trailer transports a diesel power plant, which lights the show on location and runs the exhibit machinery; another provides locker space for the crew; a third is utilized for sound motion-picture projection and the development and printing of photographs. The complete caravan, including demonstration cars, stretches down the road a distance of more than 2 miles when moving from one town to the next. . . . A large tent, which seats 500, is erected on location; its silvered top protects audiences against the heat of the sun. Passages connect show trucks and tent, so that the crowds are protected from rain. Educational exhibits carried in the big trucks contrast new standards with the old in transportation and in housing.

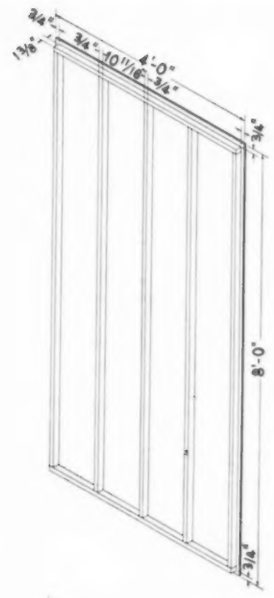
pre-engineered houses

Factory-built by Harnischfeger Corp., Milwaukee, manufacturers of electric traveling cranes and electric hoists. Production begins late this month at the rate of 10 *houses a week. Present market limited to southern half of Wisconsin. Sales will be made through real estate brokers on FHA terms. Erection by local contractors under supervision of factory experts. Price: under* $4,000.

The "20th Century Home" provides six rooms and bath. The house may be had with or without basement, and with either hip or flat roof.

Construction: The house unit without a basement is designed to be erected on 14 concrete piers. The basement type, slightly higher in cost, is erected on a concrete block foundation and includes a 4" concrete basement floor. The base of the house consists of 5 framed sections made with 12" electrically welded steel channels, firmly doweled and bolted together; each section is reinforced with five 6" cross channels. The underside of the base is completely covered by galvanized metal sheets and insulated by 1 inch of insulation material. The framework is fabricated from steel sections bolted and welded together. Exterior wall finish consists of special weather-resisting color-process coatings applied over building board and asphaltic coatings. The hip roof is built in 12 sections, each constructed of steel rafters to which 1" x 6" tongued and grooved roof boards are securely fastened for the nailing of composition asphalt shingles. Living room, dining room and hall, bedroom and closet floors are clear red oak; kitchen and bathroom floors are covered with high grade linoleum, and the utility or heater room has a concrete floor. Interior doors are of honeycomb core construction, with flush veneer sides.

Equipment: Air conditioning is provided by a forced warm-air system. There is a separate hot-water system with hot-water storage tank. The house is wired and equipped with lighting fixtures. Bathroom, kitchen and laundry are fully furnished.



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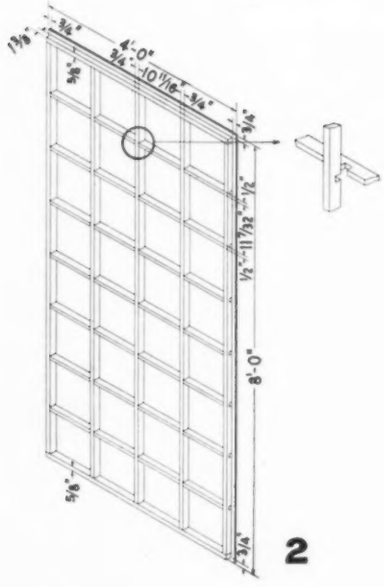

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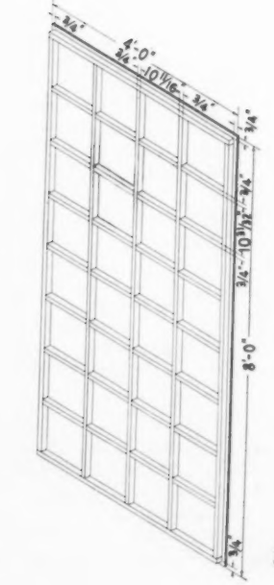


3

plywood-covered wall panels

The following report has been prepared by R. F. Luxford, engineer, Forest Products Laboratory, Forest Service, U. S. Department of Agriculture. The laboratory is maintained at Madison, Wis., in cooperation with the University of Wisconsin.

Previous tests at the Forest Products Laboratory have shown that the strength and rigidity of floor and wall panels with plywood coverings may be increased enormously by gluing, instead of by nailing plywood to studs, plates, and sills. Increasing interest in this type of panel, especially since its use in an experimental house recently built at the Laboratory, led to a series of tests.

Panel construction: Six wall panels, each 4 feet wide by 8 feet long, were used in this series of tests. Panel 1 had five western white pine studs each ¾″ thick and 1⅜″ wide as shown in Figure 1. Panels 2, 3 and 4 were similarly constructed but with studs 1¾″, 2¼″ and 3⅝″ wide, respectively. Panels 5 and 6 were similar in construction to Panel 1 except that crosswise pieces were inserted at right angles to the length (Figures 2 and 3). All studs were spaced approximately 12 inches apart. The covering was 3-ply ¼″ Douglas fir plywood and was glued with casein glue (F. P. L. formula B-4) to the two sides of the studs. The necessary pressure during setting of the glue was provided by permanently nailing the plywood to the studs with 1¼″ brads spaced 3 inches apart. The direction of face grain was parallel to the length. A vegetable protein glue was used in the manufacture of the commercial plywood. . . . The rigid attachment of the coverings to the studs by means of glue gives high resistance to shear between the studs and the coverings, thus causing one covering to be thrown into tension and the other covering into compression when resisting an external force. The panel acts essentially as a box girder and thus permits the use of a very thin wall to obtain the required strength.

Method of test: The six panels were tested in static bending over a 7′ 9¾″ span with the load applied at the third points. The rate at which the loading device descended ranged from 0.16 inch per minute for the panels 4⅛ inches in depth to 0.30 inch per minute for the panels 1⅞ inches in depth. Deflections were read to the nearest 0.01 inch for each 100 pounds increment of load. Control specimens cut from the panels after failure were tested in accordance with standard procedure to determine their strength properties. . . . In calculating the moment of inertia of the panels and the small specimens cut from them, all plies running perpendicular to the length of the panels were neglected. Because of the sanding incident to the manufacture of plywood the outer plies are often thinner than the nominal ply thickness. Such differences materially affect the strength and therefore actual thicknesses were accurately determined.

Relative strengths: Panel 1 had a maximum strength of 118 pounds per square foot when adjusted to the basis of a uniform load. A 60-mile wind has a pressure of about 12 pounds per square foot, which is approximately 0.1 the maximum load. The corresponding deflection for a 60-mile wind would be less than ¼ inch at the center of the panel height. Panel 1 is therefore amply strong but other considerations, such as necessary openings in walls for heating ducts, wiring, plumbing, and double-hung windows, may make desirable a thicker wall. . . . Panels 2, 3 and 4 had maximum loads of 134, 219 and 373 pounds per square foot when adjusted to the basis of a uniform load. These loads are greater than that for Panel 1 in approximately the amount expected because of the greater thickness of the panels. Lesser deflections for a given load, of course, accompany the greater thicknesses of the panels. The recorded deflections for a load of 15 pounds per square foot, assuming the load uniformly distributed, were 0.33, 0.22, 0.13 and 0.05 inch for panels with over-all thicknesses of 1⅞″, 2¼″, 2¾″ and 4⅛″, respectively. In other words, increasing the thickness of the wall by using wider studs increases the bending strength about as the section modulus is increased, or at a slightly faster rate than the stud widths are increased; and the stiffness increases about as the moment of inertia is increased, or in about the same ratio as the squares of the stud widths.

Buckling: Panels 1, 2, 3 and 4 buckled at loads one-fifth to one-third maximum because of the relatively low stiffness of the plywood perpendicular to the length of the panel. To stiffen the panel in a crosswise direction, pieces at right angles to the length were inserted in Panel 5, as illustrated in Figure 2. The lengthwise and crosswise pieces are notched half-way through at each intersection in forming the joints. Panel 5 showed considerably less tendency to buckle across the panel than did Panel 1. It was, however, lower in maximum load than Panel 1, the first failure occurring at the notches in the studs between one load point and support. The failure at the notches was caused by a high concentration of stresses, which is often several times that indicated by usual calculation. This concentration was brought about by the abrupt change in cross section. The failure at the notch occurred between a load point and a support where the shear stress is the highest. In order to overcome this difficulty and yet obtain greater stiffness than that obtained in Panel 1, short pieces were fitted snugly between the studs in Panel 6, thus leaving the studs of uniform cross section throughout their length (Figure 3). Panel 6 exceeded Panel 1 in maximum load by 25 per cent and in stiffness by about 20 per cent. Panel 6 also showed little tendency to buckle until near the maximum load.

Conclusions: These tests show that wall panels made with stressed coverings, such as plywood glued to joists to form a box girder, can be made with satisfactory strength and stiffness. For a wall height of 8 feet, 4′ x 8′ panels consisting of five studs ¾″ thick and 1⅜″ wide spaced approximately 12″ apart with ¼″ 3-ply Douglas fir plywood covering on either side with face grain parallel to length of the panel and glued to the studs are amply strong. . . . Increasing the thickness of the wall by using wider studs increases the bending strength about as the section modulus is increased, or at a slightly faster rate than the stud widths are increased; and the stiffness increases about as the moment of inertia is increased or in about the same ratio as the squares of the stud widths. . . . The tendency of wall panels to buckle crosswise of the panel at from one-fifth to one-third the maximum load can be greatly reduced by placing stiffeners between the studs at frequent intervals. These stiffeners would also greatly reduce any tendency of the panels to become wavy between studs.

STRUCTURAL PRESERVATION . . . termites, rot, fire

the termite shown 14 times enlarged

Photographs courtesy American Wood Preservers' Association

its shelter tube connection to ground

Photograph courtesy Forest Products Laboratory

decay that comes from fungi growth

termite control

The following paragraphs are excerpts from recent addresses by Dr. Thomas E. Snyder, senior entomologist, U. S. Bureau of Entomology (1935 conference of Building Officials of America at Indianapolis and 1936 meeting of the American Wood Preservers' Association at Memphis).

Damage: "The fact that termites are discovered in a building is no reason for exaggerated fears on the part of the owner. Investigation has shown that the danger of collapse of any fairly well-constructed building from termite damage alone is extremely small in continental United States." . . . "It is estimated that termites cause a loss of $40 million annually in the United States."

Termites: "There are two types of destructive termites in the United States, namely, the subterranean or ground-nesting species and the dry-wood species. The former are more widespread and require moisture for their existence. To obtain this moisture they must, as a rule, maintain contact with the soil when attacking the woodwork of buildings. This is a weak point in their life habits, since they can be killed by breaking their connections with the ground. Shut off from soil moisture, they will dry up and die. The dry-wood termites can fly to and attack wood directly and can live in very dry wood." . . . "Damage by subterranean termites is much more common and generally more serious structurally than that caused by dry-wood termites. For the entire world, damage can be proportioned between these two groups in the ratio of 95 per cent by subterranean termites to 5 per cent by dry-wood termites."

Invasion: "Complete insulation from the ground of all untreated woodwork of buildings is the only effective permanent preventive or remedy against attack by subterranean termites. . . . The principal conditions which make it possible for the subterranean termites to get into buildings are: (1) The use of untreated wood or fiber products in the basements or foundations of buildings where termite damage is most likely to start. (2) The use, in foundations, of low grades of mortar, which enables termites to penetrate masonry walls and work their way up through the interior of the walls. (3) Through earth-like shelter tubes termites are also able to crawl over impenetrable walls and thus infest buildings."

Preventives: "Recommendations are as follows: (1) No untreated wood shall be used in foundations, basements, or cellars. (2) Cement mortar shall be used in masonry foundations. (3) All masonry foundations shall be capped with concrete or mortar and slate. (4) Metal mechanical barriers shall be placed over foundations. (5) Proper ventilation. (6) Screening of all ventilation openings and doors. (7) Earth shall not be used as a filler for the foundations of porches or sun-parlors adjoining houses." . . . "Foundation timbers should be impregnated with coal-tar creosote. Interior woodwork should be given at least brush or dipping treatments with zinc chloride or an equivalent preservative and then painted with a heavy enamel paint. Such paint alone will afford some protection from attack by dry-wood termites, but paint should also be applied to woodwork in attics, as well as elsewhere, where it is not ordinarily painted because not visible. To afford permanent protection to buildings, especially in the tropics, all woodwork used in buildings should be impregnated with standard chemical wood preservatives (Federal specifications)."

Correctives: "Termites infecting beams or other wood will dry up and die if the wood is disconnected from the ground, even if they have penetrated to the third floor. Knowledge of this fact will save time and expense, especially in the case of old frame buildings, where extensive repairs would be unwarranted. Eaten timbers need not be removed or replaced, unless seriously weakened structurally." . . . "Owing to the extent of possible ramifications of subterranean termites in a building that has been infested for some time, and the protection which they have in their burrows concealed in the wood, no control worth while can be obtained by fumigation or spraying. Spraying, even under strong pressure at borings made in eaten timber, is unsatisfactory."

termilite-treated insulite

Insulite Co., Minneapolis, now offers its products (Sweet's Catalog File 13/19) with a treatment to resist damage by termites, rot and fungi.

Termilite is a derivative of creosote. The preservative chemicals are mixed with the wood fibers used for the formation of Insulite products, thereby providing an effective and permanent treatment throughout the insulation material. Since the chemicals are colorless, odorless and tasteless, products so treated are not changed in appearance.

hardwood creosote preserver

Produced by Tennessee Eastman Corp., Kingsport, Tenn. (Sweet's Catalog File 12/7).

"NO-DK wood preserver" is a concentration of creosote obtained by destructive distillation of Appalachian hardwoods. Testing laboratory reports show that it is four times more toxic to decay and termites than ordinary coal tar creosote. It contains no free carbolic acid and, since it will not therefore burn the skin, it can be applied by any inexperienced workman.

improved wood preservative

Improved treating reagent developed by the Grasselli Chemical Co., Cleveland (Sweet's Catalog File 12/2).

"Chromated Zinc Chloride" is essentially a zinc chloride treatment: the zinc chloride contributes the toxic properties while the sodium-dichromate theoretically acts as a mordant, fixing the zinc chloride more permanently to the wood fiber. In addition to providing protection against decay and termite attack, it contributes fire repellence to treated wood.

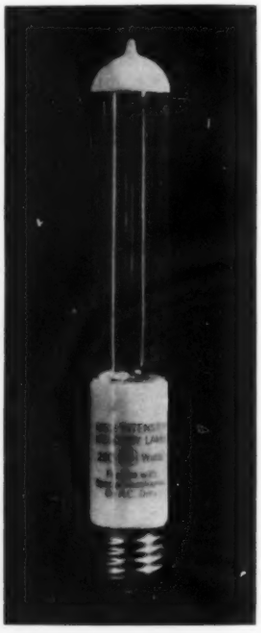
fireproofed lumber

Produced by Protexol Corp., 37 Market Street, Kenilworth, N. J. (Sweet's Catalog File 12/5). Fire tests by Underwriters' Laboratories, Chicago.

Lumber is impregnated with incombustible salts in precise quantities. Red oak and maple used for flooring and trim have been tested and approved as "practically noncombustible and non-inflammable." Workability of the fireproofed lumber was found to be unimpaired; its appearance and ability to take paint and varnish are unchanged.

lighting changes automatically with changing daylight conditions

light is reflected straight down



mercury vapor lamp

CONTROL OF LIGHT

automatic school lighting

"Better Sight" demonstration schoolroom installed at General Electric Institute, Nela Park, Cleveland.

A flexible system of incandescent lamps is concealed behind false windows to give a simulation of changing natural light, ranging from bright noon sunshine to the murkiness of a winter day. Movable desks with chairs, conventional blackboards on two walls, chalk trays and erasers provide the necessary school atmosphere. Flanking the desks are three rows of additional seats for the accommodation of "visitors."

Lighting systems: General room illumination is provided by two rows of pendant semi-indirect ceiling fixtures, three units to the row. Each fixture contains a 200-300-500-watt three-light lamp. More than 50 foot-candles are delivered to the desk tops. Eight units recessed in the ceiling, each employing two 150-watt clear lamps behind prismatic glass plates, spray the blackboards with an even distribution of light. An unobtrusive "electric eye," just beneath an electric clock in the corner of the room, automatically controls the artificial lighting according to the amounts of "natural light" present in the room at any moment. The lighting system which provides the daylight effects from the windows is equipped with a thyratron tube control, and this permits the demonstrator to raise or lower the amounts of synthetic daylight at will.

vaulted ceilings reduce glare

System installed, for experimental purposes, by Ward Harrison, director of the Nela Park Engineering Department, in his office at General Electric Co., Cleveland.

This system is said to solve the problem of providing large offices of average ceiling height with a high level of illumination from indirect lighting but without causing discomforting ceiling glare. The light is reflected from the ceiling vaults and comes down uniformly. Little is wasted on the walls. . . . The parabolic arches are about 5 feet wide and 16 inches deep. The reflecting material is "Alzak finish" sheet aluminum. Each 250-watt lamp covers a 5-foot square and is positioned to be at the parabolic focus. The "sprinkler" system employed in this experiment is not essential; each unit could be suspended from a point in the ceiling immediately above.

new mercury lamp

Developed by General Electric Vapor Lamp Co., Hoboken, N. J., and the Incandescent Lamp Department, Nela Park, Cleveland.

A new high-intensity mercury-vapor lamp —rated at 250 watts—is recommended for applications which do not permit use of the standard 400-watt lamp. It has an efficiency of 25-30 lumens per watt, producing as much light as is delivered by 425 watts in incandescent lamps. It has an operating life rating of 2,000 hours. A special transformer is required for each mercury-vapor lamp.

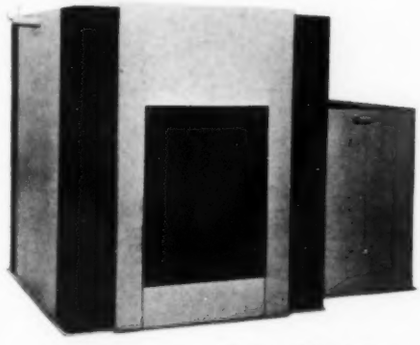
light-weight light bowl

Introduced by F. W. Wakefield Brass Co., Vermilion, O. Bowl made of Plaskon.

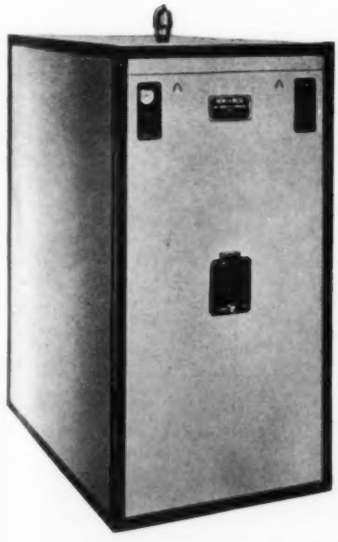
"Commodore Luminaire" is an open-bowl lighting unit. The bowl measures 18⅜" in diameter and weighs 14 ounces (a similar glass bowl would weigh 10 pounds). It transmits 83% of the light and is itself luminous.

Modine Mfg. Co.

York Ice Machinery Corp.



Motor Wheel Corp.



MW-ARCO furnace

changeable grille convectors

Produced by Modine Manufacturing Co., 1231 Seventeenth Ave., Racine, Wis.

Four types of convectors—concealed, recessed, floor and wall types—are available. Interchangeable grilles make it possible to harmonize the convector with the decorations and appointments of any room. The heating section is an all-copper fin and seamless copper tube assembly.

residential air conditioner

Announced by Robeson Engineering Co., 290 Sanford Street, East Orange, N. J.

Central system provides heating, humidification, filtering. Blower is placed in combustion chamber to give quick heat transfer.

portable air conditioner

Produced by York Ice Machinery Corp., York, Pa. (Sweet's Catalog File 26/21).

Model BA-100 is a companion to the BA-75 portable air conditioner introduced last year for the cooling of offices, hospital and hotel rooms, and similar small spaces. The new unit is slightly larger, has increased cooling capacity and the optional functions of heating and humidifying in winter. An electrical panel operates on either 110 or 220 volts a.c.

weather control units

1936 *models announced by Heater Division, Motor Wheel Corp., Lansing, Mich.*

All models are self-contained units which provide facilities for automatically heating, filtering, humidifying and circulating the conditioned air. The units are fired with the MW Emancipator pressure burner, rubber-mounted on the front of the furnace to insure quiet operation. Heating capacities range from 85,000 to 175,000 B.t.u. output.

rubber-bladed fan

Marketed by Samson-United Corp., Rochester, N. Y. Cost: $7.95 (*standard*) *and* $8.95 (*de luxe*).

"Safe-Flex Fan" has flexible blades of tough molded rubber, rigid enough to deliver a steady current of air but sufficiently soft to prevent injury to even a child's fingers.

electric floor fan

Designed by Robert Heller. Marketed by A. C. Gilbert Co., New Haven, Conn. Retail: $25.

"Airflow" is an oscillating fan placed on a standard like a floor lamp and adjustable as to height.

oil-burning furnace

Produced by American Radiator Co. and Motor Wheel Corp. Announced by Heater Division, Motor Wheel Corp., Lansing, Mich.

"MW-ARCO Oil Furnace" is furnished as a complete unit with the boiler, burner and controls housed in a tailored cabinet. Efficiency is said to be greatly increased by a special pear-shaped prefabricated combustion chamber developed in the MW engineering laboratories. The unit is available in a range of models with ratings up to 755 square feet of installed steam radiation, 1,205 square feet of installed hot-water radiation and up to 391 gallons of hot water per hour.

two new oil burners

Developed by Bethlehem Foundry and Machine Co., Bethlehem, Pa.

Types: A model CE conversion burner, and a model FE flange type burner. *Features:* "Monitor" motor-fan-pump unit; rubber cradle mounting; improved "rotaire" diffuser; simplified nozzle-electrode assembly.

automatic gas water heaters

1936 *models introduced by Premier Heater Division, Crane Co., LaPorte, Ind. (Sweet's Catalog File 26/26).*

New features: 2½ inches of insulation; improved lines and baked enamel finish; controls and drop-out burner moved to 30-degree angle, reducing required floor space; greater array of sizes and capacities.

pneumatic spreader

Introduced by Iron Fireman Manufacturing Co., Portland, Ore. (Sweet's Catalog File 26/41).

This stoker carries "steam" size coal into the furnace on a stream of air. Fine particles of coal are burned in suspension; larger pieces (lumps up to 1½ inches in size are handled with ease) are spread over the grates in a uniform shallow layer. The temperature at the grate line is below the fusion point of the ash, and even high-sulphur coals do not form clinkers. . . . The stoker may be placed 8 to 15 feet from the boiler front, and even in a separate room. The only change required in the boiler front is a hole large enough to admit the spreader nozzle. Five sizes are available with capacities ranging from 75 to 500 boiler horsepower.

gas from farm wastes

Generator manufactured and marketed by Economy Gas Generator Co., 5 N. Grand Blvd., St. Louis.

"Economy Gas Generator" is designed to supply gas for cooking, heating, lighting, and power for household appliances and farm equipment. Gas is made from the controlled destructive distillation of waste materials—corncobs, leaves, straw, paper, refuse, wood, anything that burns.

Operation: The generator consists of an alloy metal retort mounted in a semi-steel furnace, a gas purifier, a sheet steel storage tank, and necessary piping, valves and gauges. The plant can be installed compactly within an area 10 feet square, or the individual elements can be placed separately in different locations to meet any desired arrangement. There are no moving parts. No skill is required in operation, and maintenance costs are low. Approximately 3½ hours are necessary to make a "run" which will yield the average family a 2 or 3 days' supply of gas. Two tons of average farm waste will produce gas sufficient for nearly 3 months.

wall tiles are set without cement

tile-holding grid

Lockon System invented by H. J. Reed Barrett, architect. Financed and developed by Industrial Developments, Inc., 40 Wall Street, New York. Marketed through Tile and Mantel Contractors' Association of America, Inc., and two chief unions in the field (see "Marketing News," page 42, advertising section).

Ceramic wall tiles with grooved edges are snapped into place on a series of metal strips to give a rigid, uniform surface for walls and ceilings. Extra cost of the metal grid is offset by saving of time and labor on the job.

Installation: Metal strips of cadmium-plated steel or bronze are supplied in suitable lengths as studs and purlins. Vertical studs are nailed or screwed to either rough or finished surfaces and plumbed only to the finished wall surface; horizontal purlins are next locked into notches on studs. Glazed tiles (available in standard sizes and colors) are then snapped into these supports. Joints, filled with mastic or cement grout, provide expansion and contraction and allow settlement. Appearance is identical with ordinary construction—no metal shows and standard wall accessories like towel bars and soap holders are easily attached. . . . Various wall materials are applicable to this system, but at present the specific use of tile is being promoted.

Flexibility: The system is quickly installed over old surfaces. No delay or dirt is caused by ripping off old plaster. Since the entire surface, including tile and metal supports, can be taken down, removed and reinstalled, the system has high salvage value, especially for short-term lessees who have heretofore hesitated to use tile because of its permanence of construction. Individual tiles are likewise easily removed and replaced to give free access to conduits and piping behind the tile surface.

noises are blotted away

snap-on moldings

Produced by Pyramid Metals Co., 455 North Oakley Blvd., Chicago (Sweet's Catalog File 15/24).

A corrugated pattern, 1¼" wide, has been added to the line of stainless steel moldings.

new super conduit

Produced by National Electric Products Corp., Pittsburgh. Listed and approved by the Underwriters' Laboratories, Incorporated.

"Suparduct" is manufactured from a non-ferrous non-magnetic alloy. Its dimensions are identical with those of steel conduit. It may be cut, threaded, bent and installed with the same tools and in the same manner as steel conduit. Its weight is less than one-third of the copper-silicon-manganese type of alloy and about one-third of steel. Because of its resistance to corrosion under all atmospheric conditions it does not stain or streak the surface of the structure on which it is installed.

colored stainless steel

Developed and produced by Oscar B. Bach in his studios, 305 East 46 Street, New York.

"Stainless Steel—Permanently Colored" is a process involving heat and chemical treatment whereby any desired color can be obtained in the surface finish of stainless steel. The stainless qualities are not affected; the finish, becoming an inherent part of the material, is said to increase the resistance to abrasion. The coloring technique is announced as commercially practical and reasonable in cost.

nickel-clad steel

Developed by Lukens Steel Co., Coatsville, Pa.

This bi-metal consists of a light layer of solid nickel permanently bonded to a heavier layer of steel. The cladding, possessing the same properties as nickel itself, combats corrosion. It is used in hot-water storage tanks to prevent rusty water.

steep roof pitch

Developed by Barret Co. (Sweet's Catalog File 8/3).

This product combines the waterproofing advantages of coal-tar pitch with unusual pliability and stability. Tests have demonstrated that it will not slide or "bleed" at the highest temperatures to which roofs are subjected and yet will withstand winter cold without cracking, checking or loss of bond. A fire-safe gravel or slag wearing surface is made possible on steep roofs as well as on flat roofs. The pitch is being promoted for use in built-up roofs with an incline from 2 to 6 inches to the foot.

porcelain enamel partitions

Produced by Sanymetal Products Co., Inc., 1699 Urbana Road, Cleveland (Sweet's Catalog File 20/17).

"Porcena" toilet partition installations consist of flush type insulated panels with porcelain enamel on both sides and doors finished in a plain baked enamel. The panels are 1 inch thick. They withstand rough treatment and are easy to keep clean. Color treatment and a variety of arrangements are obtainable.

metal toilet partitions

Produced by Mills Co., 965 Wayside Road, Cleveland (Sweet's Catalog File 20/7).

Bottom hinges are gravity type, with steel cams completely inclosed, and are adjustable to any desired angle of closing. Latches are fitted with anti-rattle springs. Door bumper and coat hangers have rubber tipped inserts.

doorless 'phone booth

Produced by Burgess Battery Co., Acoustic Division, Madison, Wis. Retail price: $105.

Extraneous sounds are absorbed rather than blocked in the design of this telephone booth. The interior is faced with Burgess Acoustic Treatment (a perforated metal sheet backed with balsam-wool) which blots up the sounds and produces comparative quiet within the booth. Even the speaker's voice is not transmitted beyond the booth. Conversations are easily maintained in noisy factories, subways and other places where speech would otherwise be impossible. . . . The perforated metal facing may be washed easily. Its construction discourages defacement by pencil scribblers.

for removing seepage water
PENBERTHY AUTOMATIC ELECTRIC SUMP PUMP
Made in 6 sizes
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(Water or Steam operated)
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DWELLING CONSTRUCTION BY DEVELOPMENT BUILDERS FORGES AHEAD

By L. SETH SCHNITMAN

Chief Statistician F. W. Dodge Corporation

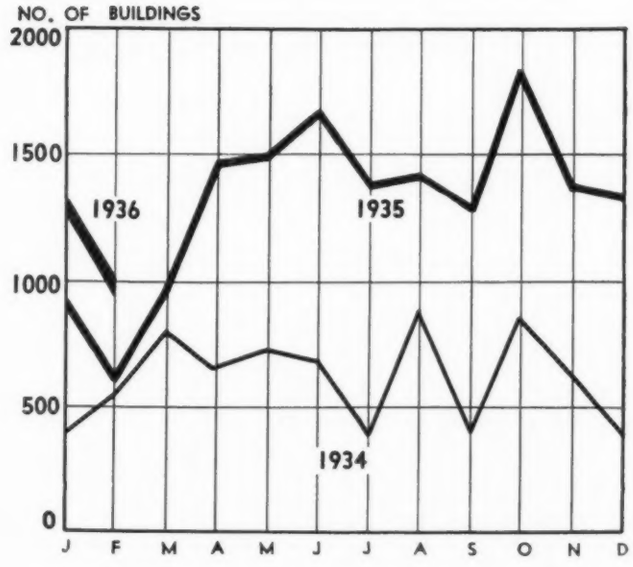


Chart 1—Month by month, since the beginning of 1935, more new single-family dwellings have been undertaken by development builders than in the corresponding month of the previous year.

The operations of speculative homebuilders and development companies have broadened considerably since the end of 1934. That this is no mere flash appears certain from the statistical picture for this class of residential building activity.

There are a number of reasons why this improvement in development company operations has occurred. Of these none perhaps is so impelling as the recognition by speculative and operative builders that a genuine demand exists for an inexpensive, well-built house which embodies many of the features previously available only in the more expensive home, such as brass piping, copper guttering, mechanical refrigeration, oil burner, air conditioning, insulation and the like.

Liberalized financing, too, is playing its part. Directly and indirectly, the Federal Housing Administration plan of insured mortgages has afforded considerable stimulus to speculative building undertakings in the small house field.

The availability of first mortgage money for small houses on the basis of an 80 per cent ratio to the appraisal value, amortizing over a period of twenty years, has eliminated the need for junior financing. To be sure, not all small homes now being erected are financed under the FHA insured mortgage plan. This program, none

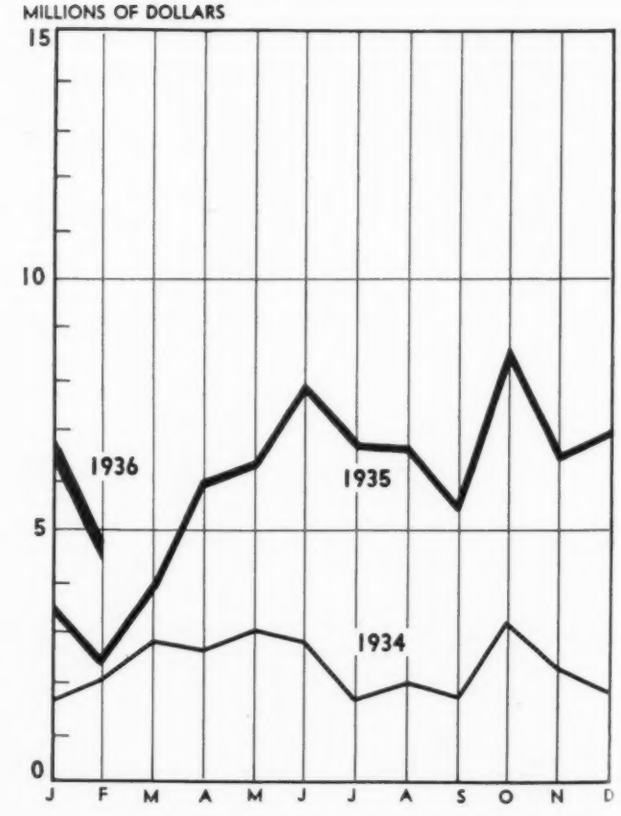
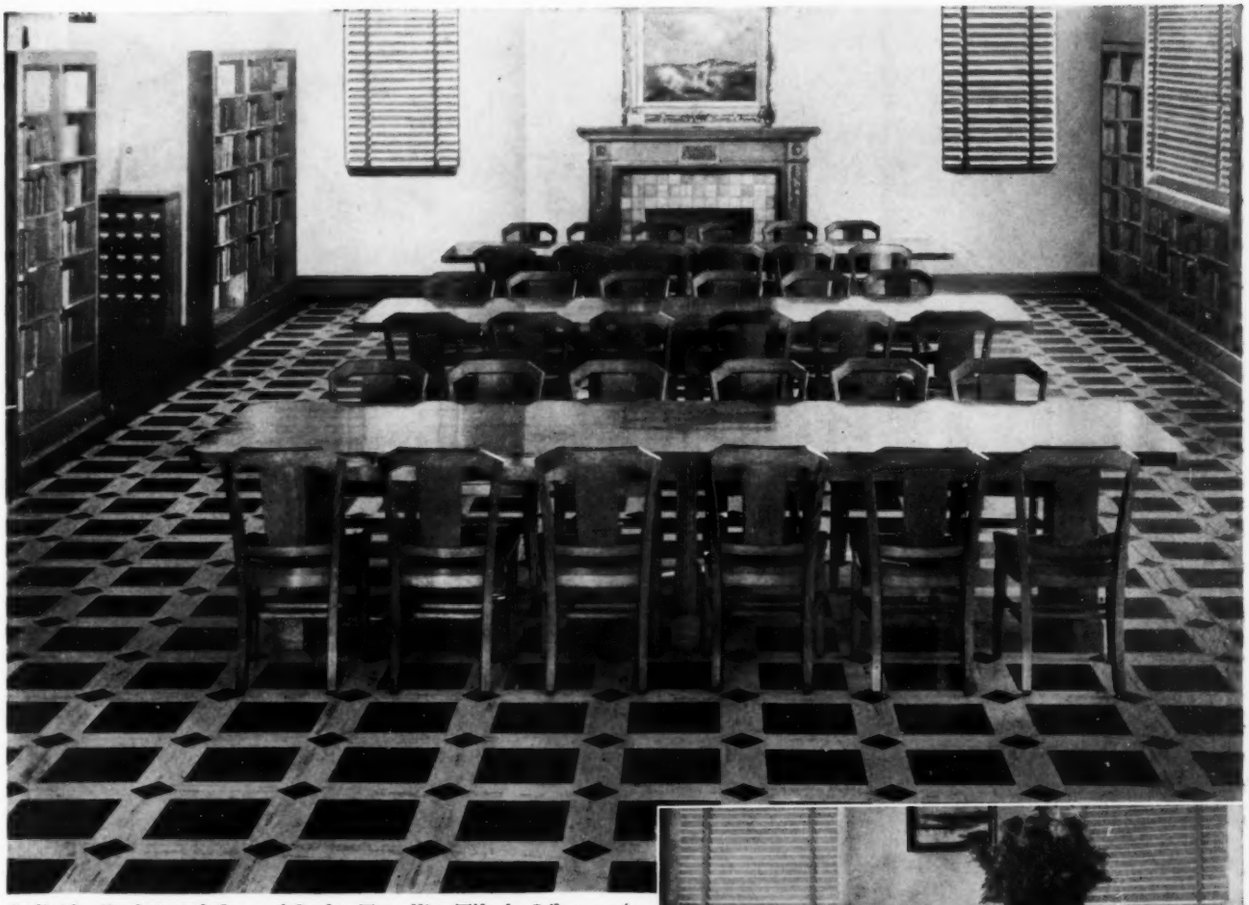


Chart 2—The aggregate valuation of development operations in the field of single-family houses, likewise, has been greater month by month than for the corresponding months of the previous year.

SEALEX TREADLITE TILE *gives architects full scope in planning* **individual** *tile designs*



Individually-designed floors of Sealex Treadlite Tile in Library of Ponca City, Oklahoma. **Architect: G. J. Cannon.**

ANY tile floor whatever, that you may design for your clients, can be executed in Sealex Treadlite Tile. Your specifications will be followed exactly, for there are separate square and rectangular tiles available in many different sizes. A wide range of plain and marbleized colors, too!

In libraries and other areas where quiet is desirable, Sealex provides the ideal floor — muffles the sound of footsteps. Its smooth, sanitary surface is exceptionally easy to keep clean. Moreover, Sealex is a *permanent* floor—never needs refinishing.

In addition to Treadlite Tile, Sealex Linoleum is available in Plain, Jaspé and Veltone designs that will carry out any desired scheme.

Installed by authorized contractors of Bonded Floors, Sealex materials carry a guaranty bond covering the full value of materials and workmanship. Write for our complete catalogue.

CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

SEALEX TRADEMARK REGISTERED *Linoleum Floors and Wall-Covering*

the less, has impelled savings banks and state-chartered building and loan associations who are not operating on the insured plan to extend their terms to cover a twenty-year amortization period on interest rates at least as attractive as those offered by institutions subscribing to the FHA plan.

Dr. Herman L. Reis, President of the West Side Federal Savings and Loan Association in New York City, has stated that, from his experience, "the more liberal financing terms available under the FHA plan have, to a very substantial degree, accounted for the large gains in housing development operations in the metropolitan area of New York."

Each month of 1935, for the 37 states east of the Rocky Mountains, showed a larger number of new single-family houses erected by development builders than in the corresponding months of 1934. For 1935 as a whole, on the average, 1,300 new homes each month were undertaken by development operators in the 37 states, with an average monthly total valuation of about $5,855,000 exclusive of the value of land.

During 1934 such operations averaged only about 600 new dwellings per month with an aggregate monthly average valuation of only about $2,245,000.

From these comparisons it is seen that in units the 1935 operations of development builders were about 217 per cent of the 1934 results and, that on a valuation basis, 1935 was 260 per cent of the 1934 volume. These data do not include such single-family houses which were erected by small carpenter or mason builders for purposes of sale.

The average value per single-family dwelling erected by developers in 1935 was $4,500. In 1934 the average value per unit was only $3,782. The increase in average cost per house between the two years was as much a matter of improved quality and broader activity in the East and North as a reflection of rising unit building costs. To illustrate, air conditioning and insulation figured much more actively in the houses of 1935 than in 1934.

The outlook for development building operations of the type here described is decidedly encouraging. It is not that we are soon to witness boom proportions, but rather that the improvement that started in 1934 seems destined to continue through 1936. The direction is upward and a gain of substantial proportions for the current year as contrasted with 1935 may be confidently expected.

All charts cover figures for the 37 states east of the Rocky Mountains only.

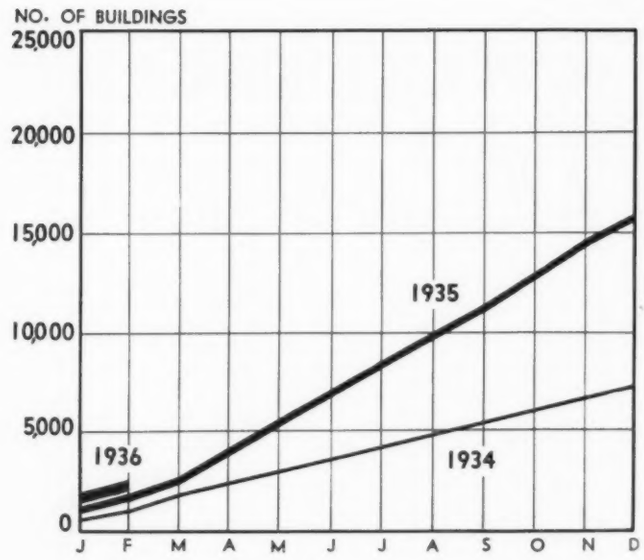


Chart 3—This chart depicts the cumulative course, in units, of data shown in Chart 1. The position of any curve at any month indicates the total for the year to and including that month.

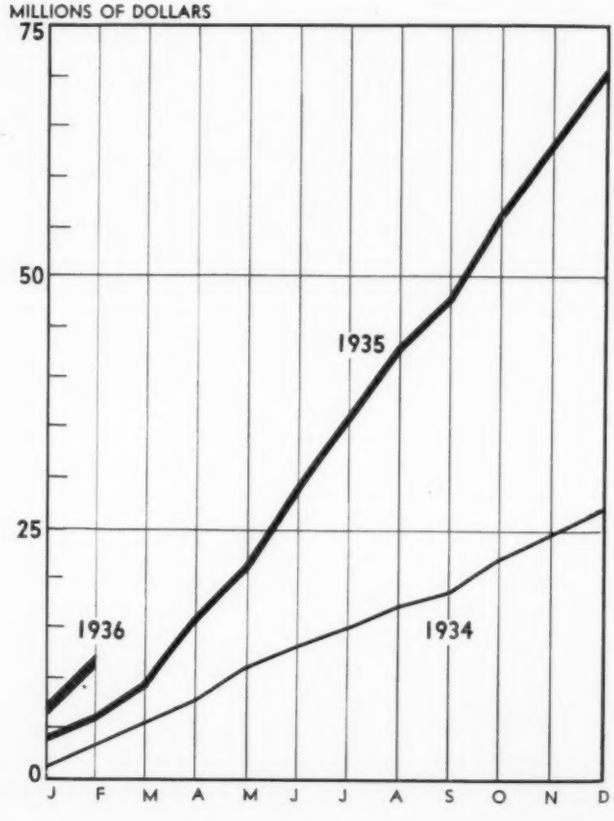


Chart 4—This chart traces the improvement that has occurred in the valuation of operations of development builders on a cumulative basis since the beginning of 1934.